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"Scire est nescire, nisi id me
Scire alius sciret."

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POST-GRADUATE STUDY.

BY

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The Inaugural Address at the Annual Meeting of the Bath and Bristol Branch of the British Medical Association, 25th May, 1910.

THE honour of addressing you at the oustet of another official year falls to me. I understand the rule in the election of president to be, out of three years one year for Bath, alternating with two consecutive years for Bristol. It is not very often that a country doctor is the recipient of the distinction, so I feel all the more deeply the honour which has been conferred upon me by the members of the branch and the Council of the Bath and Trowbridge divisions in my selection as president of the sixth largest branch of the British Medical Association. With the Association I can claim a long connection, having been a member for upwards of twenty-seven years, and having attended eighteen of the general meetings, besides many of the local ones. When I settled in Frome in 1882 my

senior colleagues had not ceased to eulogise the splendid annual meeting of the Association held in Bath in 1878, under the presidency of Randall Wilbraham Falconer, M.D. One of the features of that meeting was the decision, taken on a vote, rejecting the admission of qualified medical women to the membership of the Association, a decision which was reversed at the Nottingham meeting in 1892.

The subject which I have selected for this occasion is Post-graduate Study . . . and here followed a retrospective personal allusion, ending with the statement that when the writer left, after a year's residentship in the Aberdeen Royal Infirmary in 1882, the principles of Lister had taken firm root, abdominal surgery was in full swing, deformities of the bones were being successfully treated by surgical operation, and Professor Ogston had discovered the micro-organisms of pus and certain surgical diseases.

With these preliminary remarks, I now proceed to lay before you a few thoughts which have long been present to my mind with regard to the subject of post-graduate study. We hear a good deal about the choice of a profession in a young lad's career, but not so much later on about a course of post-graduate study when he has qualified to enter the profession of his choice. Let me first of all say that if a man has received his degree or diploma, it is well that he should study, for a time at least, in the great school of general practice.

As " the three R.'s " made the embryo schoolboy, so the three great sections of practice—medicine, surgery and midwifery —make the embryo practitioner. At the outset, the practitioner's skill in these three subjects is not only unequally proportioned, but it is also of a very elementary description ; therefore it is advisable that he should seek the opportunity of further hospital attendance, or of placing himself for a time in subordination to one or other of his more experienced colleagues. As adjuncts to his professional acquirements, I consider the newly-fledged practitioner should acquire a knowledge of drawing, shorthand, and cultivate the arithmetical faculty. Another excellent acquisition is some facility in discussion. The German student

has the advantage over us in this : as a part of his medical examination he is trained to speak, for he must discuss a given subject for half an hour in every section of his examination.

The next, and most important acquisition for the young doctor is manual dexterity, although nowadays the necessity for rapid manipulation in surgery has gone. John Hunter, in his early days (as did also Sir William Fergusson, Bart., F.R.S.), tried his hand at cabinet-making, and prided himself on his manual dexterity. Lawson Tait, in like manner, told us in the address in surgery in 1890 that he served his time at the bench, and James Greig Smith gave the surgeon the name of "hand-worker." Although rapid operation work is no longer necessary, careful and exact handwork is more essential than ever, as many of our modern operative procedures are of a highly delicate and technical description. There are also many special departments of medicine and surgery which medical students are not required to attend for examination purposes, although during their professional career they find a knowledge of these to be essential. Again, much of the general practitioner's work is of a trifling nature, but it comprises duties demanding experience or watching the experience of others. Assistantship or pupilage is therefore a very valuable boon, as it enables the student to learn the management of patients, the art of prescribing, routine surgery work, to which may be added a knowledge of book-keeping, and nowadays particularly the art of driving and managing a motor-car.

While travelling abroad many years ago I met a Swiss doctor, who told me that for part of every year he was able to leave his practice and take a course of study at one or other of the great medical schools. Were we all able in this country to do likewise, what a boon it would confer on our professional life! Osler speaks of the "quinquennial brain dusting" at a hospital or post-graduate school, a process which is quite out of the power of the majority of practitioners in this country. For the country doctor's self-training, while he ploughs his lonely furrow, the means at his disposal are mainly reading, note-taking, the medical societies, and the methods of acquiring manual dexterity.

For reading, a good system of medicine and surgery is recommended, also a good cyclopædia for consultation, or the *Medical Annual*. In the larger towns the practitioner is better off, access to a good library being ready at hand.

When a medical man has regularly settled down in practice his post-graduate study resolves itself into two aspects: the one is that which has just been alluded to, viz. self-training; the other is attendance at a post-graduate college or other medical institution at stated periods. Looking first at the aspect of self-training, it is evident that in order to be a successful practitioner it is of the very highest importance that a considerable part of one's spare time be devoted to this object. Indeed, of the two forms of post-graduate study mentioned this is by far the more important, for the simple reason that a man who has kept his mental and practical faculties bright and polished can so much more readily assimilate and make good use of the information which he may pick up at a post-graduate college, and perhaps what is of still more importance, his interest and enthusiasm are maintained at a high level, after all the key to the easy and rapid acquisition of new facts and methods. A young doctor will find that at certain seasons of the year a great deal of spare time will be thrust upon him, and if he is wise he will at the outset of his career utilise it to keep himself abreast of the rapid changes and evolutions that occur in the progress of scientific knowledge.

As we are engaged in professional work that has not only a curative but preventive side, we have to deal not only with the necessities of the individual, but also with the means of arresting disease and the prevention of its spreading. Therefore the first and greatest essential is the matter of *diagnosis*. Success in practice, scientifically considered, depends chiefly on skill in diagnosis. Diagnosis involves a wide and careful study, in which the finer methods are developed, and the training of the special senses—the eye, the ear, and the sense of touch. And yet all these are impossible without an accompanying experience. It is when our special senses are constantly and minutely applied in our experience of disease that diagnosis tends to become more and more easy and perfect. The young practitioner is very often

found to be capable in the diagnosis of what may be termed the classical diseases, but as a general rule he is only partially informed or quite uninformed on many subjects with which he would be called upon to deal in private practice ; but if he keeps a record of his experience noted down, and if he cultivates a good memory, he will be placed at a great advantage. In the practice of medicine memory counts for a good deal. In law a solicitor can look up his books in the presence of his client, or a barrister in consultation can look up the decisions of the courts. The client thinks all the more of his solicitor if he can read out the law to him from a book, whereas the doctor or consultant must appear as though his knowledge and opinions were the outcome of his own experience without turning to books or records, and the patient will be comforted when he learns that the doctor has had previous experience of his complaint. Hence the value of good note-taking in post-graduate study, and the practice of making comments on the scientific aspects and bearings of the notes that are begun. In this way, as Osler says, post-graduate study comes to be a habit of mind, and is acquired like other habits, viz. by the repetition of the practice of looking at things in an inquiring spirit. " Thus, a patient with pneumonia is found to have grass-green sputum. Have I ever seen it before ? Have I made a note of it ? If not, where can I get a good description of it, and what does it signify ? These are the sort of questions which lead to a good clinical education, which will stand the practitioner in good stead as the basis of intelligent judgment on many important cases."

After diagnosis we naturally think of *prognosis*, an element in post-graduate study which is to my mind the most difficult and the one least studied. Hippocrates gave it its value when he said : " It appears to me a most excellent thing for the physician to cultivate prognosis, for by foreseeing or foretelling in the presence of the sick the present, the past, and the future, and explaining the omissions which patients may have been guilty of, he will be the more readily believed to be acquainted with the circumstances of the sick, so that men will have confidence to entrust themselvses to such a physician, and he will

manage the case best who has foreseen what is to happen from the present state of matters." This was the closing sentence of the address in medicine delivered by Sir Dyce Duckworth at the annual meeting at Carlisle, and I remember being much struck by a remark in that address where, quoting from an eminent French physician, the speaker said: "No one can frame a prognosis for a diabetic patient until he has been fifteen years in practice." This appeared to me at the time to be applicable to any other morbid condition; that prognosis became a matter of experience, and that we must look to the senior members of our profession only to forecast the issue of a case.

Here were quoted two cases, one to show the inaccuracy in prognosis that occasionally happens to the more experienced, and the other an exceptionally brilliant prediction by a surgeon of great celebrity.

Prognosis is the point which is most persistently put to the practitioner by the patient or his relatives. The first word is, "What do you think of the case?" and an answer is eagerly awaited, and when given its effect is decisive. Therefore it is a good rule that the practitioner, having once given his opinion, should stick to it, or confidence in him will be lost. Remembering the pitfalls of prognosis, great circumspection should be exercised by the practitioner in his choice of words where the case is doubtful. On the other hand, when the prognosis is clearly good, it ought to be made with confidence. Under all circumstances hopefulness should be the predominant note, and even in desperate cases the best should be seized upon and made a source of comfort.

A good illustration of the pitfalls in prognosis referred to is that afforded by tuberculosis of the lungs. If a patient on first examination were to show signs of cavities and other advanced signs of disease, the practitioner might be liable to state that the patient could not live more than a few months. Sometimes, however, inquiry into the history will elicit the fact that the patient had been suffering for years with cough and expectoration, and the case may be one of fibroid phthisis, with possibly twenty years of life in front of him. The late Sir Andrew Clark

was fond of referring to this danger in the prognosis of phthisis, as he himself was a living example of it, having early in his life been condemned to die in six months, according to the opinion of an eminent physician of the time. Sir Dyce Duckworth's quotation, already referred to, struck me from the day I heard it, and even in one's small country experience one finds with diabetes that in early adult life it is a highly dangerous disease; that insuperable constipation in a middle-aged diabetic is a grave condition; and that suspicions of the onset of coma at any age may be taken as significant of approaching demise. Again, one was taught to consider the "typhoid state" as indicative of impending death, but one lives to see the dry, brown tongue, with, weak irregular pulse and delirium, recovered from, and the occurrence of Cheyne-Stokes respiration in cerebral hemorrhage need not necessarily portend a fatal issue. On the other hand, it is my experience that acute diseases of a serious nature occurring in a hemiplegic are generally fatal, and the sudden onset of general coldness in an aged person suffering from any disease affecting the vital organs may be taken as the precursor of imminent death. These personal aphorisms on prognosis, however, seem to tempt me from the subject of my paper, and to bring this department of medicine in line with post-graduate study would be to recommend the address on prognosis from which I have quoted, and generally to note the many circumstances that help one to gauge the constitutional and vital powers of the patient.

There is, as I have said, no greater test of a physician's skill in the eyes of the public than his ability to forecast the result of disease. There are few of us who cannot recount errors of prognosis made by ourselves or our friends. Many persons continue to live who were condemned to die, and many have died whose end was not expected. It is ever wise to exercise the greatest discretion, and I commend the dictum of the philosopher Bacon, who counselled "not to engage a man's self peremptorily in anything, though it seem not liable to accident, but ever to have a window to fly out at or a way to retire."

To prognosis succeeds the question of *treatment*, and for

purposes of proficiency in private practice in this matter I ever advocate a forward policy. The subject of the address from this chair last year was the "*Vis Medicatrix Naturæ*." Its influence I fully recognise; but we are here to cure or relieve disease or distress, and I for one am ever ready for profit to oblige the public in their craving for the multifarious medicaments and remedies whose names are now rendered so familiar by the lay authorities, so diligent and so enterprising in original research in this department of our calling.

For a long time there was something of the nature of a reaction against active medication, but in later years the fashion seems to have come in again. With regard to the question of drugs, we find at the present day a considerable modification of the older methods. In the old days nearly all drugs were compounded from pharmaceutical preparations and made up to the doctor's prescription. Some of them had the disadvantage, no doubt, of being rather nauseous, and this perhaps to some extent has accounted for the fashion which has been considerably overdone, of ordering proprietary preparations to the neglect of the regular prescription. While some of those preparations are very useful and conveniently made up, the neglect of the prescription is to be much deplored, and I would urge the careful consideration of this point. The present surfeit of proprietary articles is also fraught with considerable risk to the public, who get to know of them, and owing to their convenient form self-medication is encouraged to their and our detriment. Doctors in practice in the country still dispense, and although as a rule an assistant of some kind is available, many have personally to undergo the drudgery, and I think this has a tendency to lead to a routine system of prescribing, for one may have a desire to use up the stock in the surgery rather than base one's prescriptions on a rational therapeusis.

"We all have our therapeutic ruts," says Osler, "and we all know consultants from whom patients find it very difficult to escape without their favourite prescription, no matter what the malady may be." Personally, I limit myself to the *British Pharmacopœia*, which I tell my patients is sufficient for the wants

of my practice; and if I can reflect the light of post-graduate study to improve the pharmacodynamical powers of any of my hearers, it would be to direct their attention to the section of general therapeutics in the excellent work of my friend Dr. Mitchell Bruce, keeping pace with which, edition by edition, has ever been my mainstay in trying to follow a rational therapeusis. There are few bookshelves of medical men who read that do not contain *A Manual of Medical Treatment, or Clinical Therapeutics*, by Burney Yeo, and as dieting is one of the first essentials in rational treatment, *Food in Health and Disease*, by the same author, will prove an excellent guide and form an element of the greatest advantage in post-graduate study.

I now come to the second method of study, or *post-graduate study proper*. This refers to the attendance from time to time of the practitioner at a post-graduate teaching centre; but before speaking strictly of this, I may just allude to the opportunities which the annual holiday gives of acquiring information and experience at the various health resorts, both home and foreign. It does not follow that those furthest afield are best to select; for instance, no station can be better equipped or more abreast of the times than is exemplified in this city of Bath. My friend Dr. George Oliver, of blood-pressure fame, states that the physician practising at a health resort may be regarded as a specialist in chronic ailments, and that chronic ailments are generally the outcome of some long-operating cause or causes, hereditary or individual, and the material which they furnish for his daily thought and work induces the physician to cultivate a trustful study of and reliance on physiology as the guiding star of his practice. One finds, however, that it is impossible to attain to such a high ideal as that, and the true scientific spirit is too often far beyond our reach in dealing with chronic diseases and affections of a monotonous nature.

The British Medical Association's annual general meeting has recently given facilities for visiting the health resorts of Harrogate and Buxton, and those who would care to increase their knowledge of the climatic health resorts abroad would find a very agreeable method through the *Voyage d'Etudes Médicales*, where there is

open to medical men a yearly trip to the various departments of France and the health resorts in each.

Post-graduate Schools.—With regard to post-graduate study proper, or the attendance of the practitioner from time to time at one of the post-graduate centres, this has usually been the privilege of the wealthier and more leisured members of our profession. There was an old rule in the Scottish Universities that qualified men in practice for fifteen years could matriculate, attend for one year the hospital and University, and present themselves for the final examination for the M.D. degree. Here was a good opportunity for "brain-dusting." Generations ago the great masters of medicine spent years in foreign study, but the pace they set is a hard one to keep up.

Nowadays practitioners who wish to have the best the world affords can have it through the numerous opportunities at their disposal for acquainting themselves practically with the enormous advances in the science and art of medicine and surgery with their various branches. The type of school that combines the cream of the clinical wealth of the great schools of medicine for the provision of clinical teaching for qualified medical men would be represented by the Medical Graduates' College and Polyclinic. A member of this has the right to attend clinical instruction, operations, and necropsies at all the great hospitals included in the scheme. On the other hand, if the student desired to take up any particular speciality alone he could attach himself to one or more of the special hospitals, where he can see the class of cases he wishes to study every day, and have instruction on them from a variety of teachers. The West London Post-Graduate College devotes its clinical material solely to the instruction of qualified medical men. A feature of the course is instruction in the administration of anæsthetics, including spinal analgesia, on the operating days. The London School of Clinical Medicine, the North-East London Post-Graduate College, the Seaman's Hospital, and the great Medical Schools of Cambridge, Edinburgh, Glasgow, and Trinity College, Dublin, give ample facilities for post-graduate education.

Instruction at post-graduate colleges has direct action in

the stimulation of a more thoughtful acquisition of medical knowledge. The ordinary five years' course can afford instruction of a text-book character, but post-graduate instruction leads to a more broadly thoughtful form of study. "My intercourse with those amongst them who had any conversational talents greatly stimulated my intellect," said De Quincey. In like manner thoughtful study is prompted by more advanced discussions, demonstrations and examinations of patients. These last are of special value in the acquisition of powers of diagnosis, and gradually one would be able to look back upon a considerable clinical experience instead of the mere mental recitations of text-book signs and symptoms required for a medical examination.

This difference in the character of the mental attitude of a student and a practitioner is very marked and very important. As a student one is obliged to cram much and to think little. The student does not correlate his pathology to his diagnosis and treatment. His mind is a store-house of facts. But as a practitioner he is brought to consider the why and the wherefore; his acquired facts have dovetailed with each other in the light of thought and experience; clinical demonstrations have a much more illuminating mental effect, and he acquires a general grasp of the science of medicine to which he was formerly quite a stranger. Hence the great value of a medical man endeavouring to set apart two or three weeks annually or biennially for this experience, which has the effect of constantly maintaining the scientific habit; it also adds a charm to practice which arouses enthusiasm and mental satisfaction.

Bristol University.—We have now got in the West of England that which has been so ardently desired for so many years—a well-equipped University with an abundant store of material. Time was when there was little else in England but the older Universities of Oxford and Cambridge, London and Durham; but modern universities have been established in several of the great provincial cities, and, thanks to the annual general meeting of the British Medical Association, we have been privileged to visit several of these modern schools of thought in Leeds, in

Manchester, in Birmingham and in Sheffield. A new University has, however, sprung up quite close to us, and will remain for all time. Its deed of Charter was approved last year, and the *Calendar* of the University sets forth its professions and its capabilities. For many years medical teaching was carried on at the Medical School which connected the Royal Infirmary and the General Hospital, but henceforth it will be carried on as the outcome of the establishment of the constituted Faculty of Medicine of the University.

We are now in a new era through the reformation of the medical curriculum. The President of the B.M.A., Sir William Whitla, in his address, partially entitled, "A Survey of the State of Medical Education," said: "It behoves us periodically to review our position as regards the teaching and the practical training of those desirous of joining our ranks," and "A medical curriculum which was planned forty years ago is entirely out of date." The latest reforms suggested are that anatomy should be taught from the standpoint of medical and surgical anatomy, and physiology with strict reference to practical medicine; the same direction towards their ultimate particular application is to be kept well in view in all the preliminary subjects. This programme accords with the most recent opinions of leading medical educationalists.

Post-graduate study at Bristol University is at present represented by a class held in the department of pathology, and attended chiefly by qualified men entering for the M.B. (Bristol). Intimation was given in the *British Medical Journal*[1] that a post-graduate course was about to be instituted in Bristol for qualified men who desired to read for higher degrees or diplomas, or who wished to improve their technique in surgery or surgical methods. But as our University gets under way the practitioners of the West of England will doubtless be well provided for in all the general and special departments of our science.

Gentlemen, my task is nearing completion. The remarks I have addressed to you were inspired by my predecessor's

[1] October 29th, 1904, p. 1192.

presidential address on the outlook of the medical student of the future, and the struggle which lies before him as knowledge extends and the necessity for closer study becomes greater. Extending this theme to the consideration of the lifelong studentship of the practitioner after he has completed his curriculum and obtained the imprimatur of his university or examining board, I have endeavoured to present some aspects of that lifetime of study and strenuous endeavour which he should set before himself. Hands, eyes, ears and head have to be trained, and experience to be set firmly on the "written tablets of the brain." "Write your own text-book of surgery," was the advice given in an address by Mr. Pearce Gould some years ago. This is surgical post-graduate study in a nutshell, and it might be extended to the other branches of medical science. The majority of us are unable to negotiate post-graduate courses, and with the calls made on our time and ability to take part in the general interests of the community where one is located, there is sometimes little opportunity even to fall back on books or magazine literature. Thus the danger of getting into a mental rut, or of coming under the domination of fixed ideas.

One has heard it said that we have often enough to do in endeavouring to keep pace with the original research of our patients. In country places the stimulating force is often the inquiring laity, who love to discuss matters medical which they pick up from all quarters, and nowadays in great part from newspapers. It is necessary to be abreast of all the latest medical fads, such as Christian science, faith-healing, etc., which a credulous public are only too willing to embrace. Those amongst us, on the other hand, who have the opportunity of attending a post-graduate hospital have the great advantage of seeing the application and results of the newer methods of treatment or operation. This is a very different matter to merely reading about them in journals. When the technique of these methods has been seen, and possibly to some extent acquired, the practitioner is placed in a much more advantageous position. He can then gauge in what cases he should adopt or recommend their application, and thus insight into the probabilities becomes

clear. On the medical side I may refer to such methods as vaccine and serum-therapy, blood examinations, and the determination of the opsonic index; radiology as a means of diagnosis and of cure, ionic medication, etc. It is also well for the practitioner to see the application, even should he not practise it himself, of the newer instruments, such as those for illuminating the internal cavities of the body, like the gastroscope and bronchoscope. Also how many useful and practical hints may not the practitioner obtain from seeing the latest developments in surgery and anæsthesia, such as the surgery of the viscera, which, as in the case of the heart, has attained such wonderful possibilities.

But, gentlemen, post-graduate study is not altogether confined to science. At the present time, more than at any other period in our profession, the medical man requires to be conversant with the economic problems of the hour. These have become very pressing, and affect medical practice in a vital manner. So important and essential has the study of these problems become to the medical man, that the British Medical Association has instituted for the first time this year a section entitled "Medical Sociology" at the annual meeting in London next July, when problems of high national importance will be discussed, such as the State insurance of sickness and invalidity, contract practice, the Poor Law medical service (which at present is causing such a commotion both inside and outside our ranks), hospital abuse and its prevention. It is highly desirable, therefore, to have these questions discussed at our local meetings, and some idea as to our position with reference to them defined.

It is evident, indeed, that the practitioner of the present day requires to be an all-round man, up to date both scientifically and socially. He has, therefore, to determine in the time at his disposal what is essential and what is non-essential. "Some books," says Bacon, "are to be tasted, others to be swallowed, and some few to be chewed and digested." It is unwise to admit too much, but on the other hand it is well to concentrate one's thoughts on the matters of everyday life, and to avoid theorising on what will probably never come under one's experience.

"Not to know at large of things remote
From use, obscure and subtle, but to know
That which before us lies in daily life,
Is the prime wisdom."—Milton, *Paradise Lost.*

Lastly, let it be said that he will labour most successfully who is ready in due course and at the right time to relax his mental strings, and to promote his physical and mental welfare by healthy and manly recreations. Severe and sustained effort can be maintained for only a limited period, and without islets of repose in the midst of the seas of effort, the hardiest worker will find that his best efforts are imperfect and unsatisfying, and his work will lack the spring and freshness of a healthful energy.

"The heart of man, walk it which way it will,
Sequestered or frequented, smooth or rough,
Down the steep valley among tinkling flocks,
Or 'mid the clang of trumpets and the march
Of clattering ordnance, still must have its halt,
Its hour of truce, its instant of repose,
Its run of rest."—Sir Henry Taylor's *Philip van Artvelde.*

As medical practitioners, we not only require the annual holiday, however short, but we require day by day a little time devoted to some relaxation or hobby, the pursuit of which tempers and balances the professional bent. It is where the spirit, the soul and the body are exercised and trained in unison that the best results are obtained. Where one or other is over-stimulated on the one hand, or neglected on the other, we have to suffer the consequences. This, however, is a departure into the domain of psychology, and seeing that the sands of the time allotted to me have already run out, I conclude this address with a quotation which I think is peculiarly applicable—

"Lo, thirty centuries of Literature
Have curved your spines, and overborne your brains!
Off with it, all of it! Stand up, behold
The earth, life, death, and day and night.
Think not the things that have been said of these,
But watch them and be excellent, for men
Are what they contemplate."
John Davidson, *Self-Instruction by Experience.*

CASES OF LEUKÆMIA TREATED BY X-RAYS.

BY

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THE beneficial effects of the X-rays in the treatment of leukæmia are now well known; unfortunately, they do not seem to be permanent. Although a cure is not to be expected, very decided improvement results for a considerable time. Cases of myeloid leukæmia do best. The most striking effect of the X-rays is a rapid reduction of the number of white cells, especially of myelocytes, in the blood, generally, but not invariably, accompanied by a remarkable shrinking of the enlarged spleen and a concomitant improvement in the general condition. The patients soon feel stronger and lose the sense of lassitude which so often attends this disease, or they feel more easy from the reduction of the splenic tumour. The subjective sense of improvement often precedes the other evidences of benefit from the treatment.

As to the mode of action of X-rays in leukæmia, the interpretation will necessarily vary according to the view held of the pathology of the disease.

It is now generally accepted that the marrow is affected in all cases of leukæmia, and is the chief seat of the enormous production of white cells. There is less unanimity as to the part played by the spleen in myeloid, and by the lymph-glands in lymphatic leukæmia. It is known that the spleen sorts out from the blood and destroys effete leucocytes. Dr. Andrewes in his recent Croonian Lectures states that "the opinion that the spleen-pulp is the grave of the leucocytes is fully confirmed from my observations; in no other tissue have I found these disintegrating leucocytes." The enlargement of the spleen in leukæmia may be primarily due to its attempting to carry out its normal functions and to sort out and destroy the ever-increasing number of white cells in the blood. The pathological

changes in the splenic structures may follow these efforts, partly from the task being beyond its powers and partly from the toxic products of disintegrating cells.

It is conceivable that the X-rays may act either by preventing the excessive formation of leucocytes and myelocytes, or by destroying them after they are formed (leucolysis), or by preventing them from getting into the blood. The last hypothesis may probably be dismissed at once, though from the known destructive action of the X-rays upon enzymes it has been suggested that their action in leukæmia depends upon the destruction of an enzyme in the blood, which exerts a chemiotactic action upon the cells in the marrow.

With regard to the hypothesis that they prevent the excessive formation of white cells, Mosso and Milchener found that the action of X-rays on the marrow of rabbits was to cause a partial destruction of the white cells of the marrow, whilst the reds, nucleated and non-nucleated, were not affected. This, however, could be claimed as a leucolytic action. According to Harris [1] a leucolytic action of the rays is the explanation which on the grounds of experiment has most in its favour, although it is not known whether the leucolytic body or bodies prevents an excessive formation of leucocytes or destroys them after they are formed. He quotes experiments of Helber and Linser, who produced leucopenia by injection of serum from an animal exposed to the X-rays, and observations by Capps and Smith, [2] who found that serum from leukæmic patients, who were improving under X-ray treatment, caused leucopenia when injected into animals, and again, when injected into another case of leukæmia not treated by X-rays, produced a rapid and decided drop in the number of leucocytes in the latter.

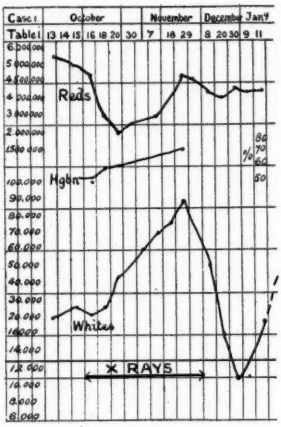
Taking the view given above as to the rôle of the spleen in leukæmia, we may conclude that the effect of the X-rays is by the development of leucolytic bodies to destroy the cells accumulated in the spleen. It may be remarked in passing that

[1] H. Harris, "Myelogenous Leukemia and its Treatment with X-rays," *Am. J. M. Sc.*, 1908, cxxxvi, 78.

[2] *J. Exper. Med.*, 1907, ix, 51.

another point in favour of a leucolytic action of X-rays is the presence of degenerated white cells in the blood, as will be seen in the cases given below. Further, this action on the spleen would explain the rapid fall in the number of white cells, the diminution in the size of the organ, and also another fact shown in Cases 2 and 3, namely that when after a time the effect of the X-rays was lost the blood deteriorated first, and the characteristic leukæmic blood-picture returned before the spleen again became much enlarged. To my mind this points to the splenic tumour being a secondary phenomenon in leukæmia, but as patients do not come for advice in the first place before the spleen is large, it

TABLE I.



is a point which we are not in a position to determine under ordinary circumstances.

I will now give an account of four cases of leukæmia treated by X-rays.

Case 1.—A.B., æt. 24, car-driver, admitted to hospital October 13th, 1905. The family history was good, and the patient himself had never had any bad illness except pneumonia twenty years previously. Twelve months before admission he had for a few days a dull, aching pain in the left hypochondrium; he then remained well until five months later, when he noticed swelling of the abdomen and a hard lump just below the left ribs. The

lump steadily increased in size, and six weeks before admission he sought medical advice. The swelling was not painful. During the last three months he had lost flesh, had vomited occasionally, had a few attacks of epistaxis, and a hard, dry cough.

Aspect, healthy; temperature, normal; appetite, good; bowels, regular; tongue, clean; lungs, normal; heart, apex beat in normal position; area of dulness, normal; sounds, irregular, with a faint systolic murmur at apex and no thrill; pulse, 54, irregular.

Abdomen, large; edge of liver, smooth, and felt one inch below ribs; spleen, very large, firm, smooth and hard. Its vertical diameter (below ribs) was $7\frac{1}{2}$ inches, and transverse (through umbilicus) 8 inches. No ascites, no œdema of legs.

DIFFERENTIAL COUNT OF WHITE CELLS (PERCENTAGES).

TABLE II. CASE 1.

Date.	pmn.	s.l. l.l.	t.	e.	b.	f.g. my.	e. my.	Undiffd. cells and l.m.	Total Whites.	Total myelocytes.
Oct. 15	46	10 8		6		20		10	62,000	20%
30	44	13		3		28		12	74,000	28%†
Nov. 7	48	11		4		27		10	110,000	27%†
27	57	8		5		23	5	2	50,000	28%†
Dec. 8	63	15		2		17		3	16,000	17%†
20	71	18 2		3		1		5	12,000	1%†
Jan. 1	65	21	1	2	4	3		4	39,000	3%
18	62	20	2		4	7		4	64,000	7%
25	62	15		2		11	4	4	66,000	15%
Feb. 5	50	16		2		26		6	87,000	26%
26	51	15		4	1.3	12.7		7	108,000	22.7%

† X-ray treatment.

To save space, the following abbreviations are used in the tables of differential counts :—

pmn. = polymorphonuclears.
s.l. = small lymphocytes.
l.l. = large lymphocytes.
t. = transitionals.
e. = eosinophils.
b. = basophil, or mast cells.
f.g. my. = myelocytes with fine granules (amphophilic).
deg. my. = degenerate myelocytes.
e. my. = eosinophil myelocytes.
b. my. = basophil myelocytes.
l.m. = large mononuclears.
nblts. = normoblasts.
mblts. = megaloblasts.

Urine, sp. gr. 1020 acid, contained a trace of albumin and no sugar; it deposited no uric acid. For condition of blood see Tables 1 and 2.

In this case the X-rays were applied over the spleen only three times a week. He soon began to feel much better, and was able to get up and move about. There was a fall in the red cells for about three weeks, which then returned to normal and remained so.

During the first four weeks of treatment the white cells steadily increased in number, reaching the highest point five weeks after it was begun; there was then a somewhat rapid fall, which lasted for a month and continued for a month after the X-rays were stopped. The fall was from a total count of white cells of 90,000 per c.m.m. to 12,000. At the end of this period the number began to rise, and continued to do so until he left the hospital in February 26th, 1906, when they reached a total of 108,000 per c.m.m. This was the first case treated, at a time when there had been less experience of the action of X-rays than is now the case, and the applications produced much redness and soreness of the skin, so that they had to be discontinued. The spleen was very slightly, if at all, diminished in size under their use, and the effect on the white cells, though profound for a short time, was very temporary. There was an improvement in general health. I heard of his death about eighteen months after he left the hospital. A copious deposit of urates, but no uric acid crystals, was observed in the urine during treatment. There was no increase in the trace of albumin found on admission, and no casts were seen.

Case 2.—July 18th, 1908. S.B., a hard-working woman, aged 42, has had three children, comes of a healthy family, and had always enjoyed good health until two years before, when she suffered for a short time from swelling of the hands and knees. She sought admission to the hospital for dyspeptic pains, vomiting, and aching pains in the abdomen, which were relieved by rest. Catamenia ceased suddenly two years before.

Aspect, healthy, well nourished; pulse, 84; respirations, 20; temperature, 99°; appetite, bad; bowels, regular; tongue, moist and clean. The urine, sp. gr. 1022; daily quantity about 40 oz.; urea deficient in amount, 1 per cent. It contained no albumin or sugar, and deposited no uric acid crystals. Except for a soft systolic murmur at the apex, the heart and lungs were normal.

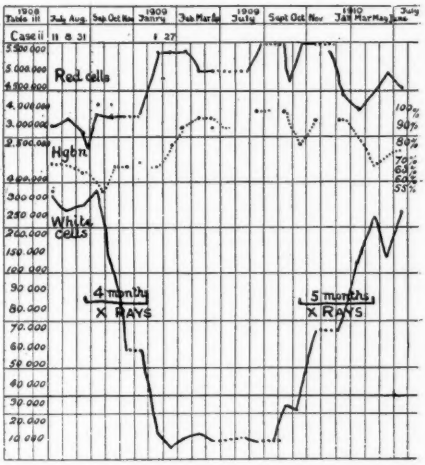
Abdomen, large; liver, edge smooth, about 1 inch below costal margin; spleen occupied nearly the whole of the left side of the abdomen, extending to within 2 inches of the umbilicus, and 1 inch above the iliac crest. It was smooth, firm, not tender. Splenic dulness began above at seventh rib. No ascites.

The bones and joints appeared normal, except for some tenderness over the right tibia.

From July 21st to August 16th she was treated with injections of atoxyl, gr. ij daily. As there was no improvement and she had an attack of diarrhœa this was stopped.

On September 8th treatment by X-rays was begun. In a week's time there was a marked improvement in strength and general well-being. For duration of X-ray treatment and effect on blood condition see Tables 3, 4 and 5. During the first three weeks of treatment the urine became loaded with urates, and there was a marked increase in uric acid passed. On October 7th she left the hospital, and was treated as an out-patient with

TABLE III.



X-rays until the end of December. With the improvement in the blood the spleen diminished in size, so that finally its tip only was felt about 2 inches below the ribs.

From January to April, 1910, she took a course of arsenic. From November, 1908, to September, 1909, she remained in good health, and was able to resume an active life, do all her housework, and also earn her living as a charwoman. In September, 1909, her health began again to deteriorate, with the reappearance of leukæmic changes in the blood, but without any further enlargement of the spleen. A second course of X-rays was given from November 4th, 1909, to March 10th, 1910, but as will be seen from the chart, without influence on the blood-state, which

TABLE IV. CASE 2.—DIFFERENTIAL COUNT OF WHITE CELLS (PERCENTAGES).

Date.	pmn.	s.l.	l.l.	t.	e.	b.	f.g. my.	deg. my.	e. my.	b. my.	Undiffd. lymphoid cells and mono-nuclears.	nblts. mblts. 500 Whites.	my. %	Total Whites.		
1908.																
July 19	33	4	2.2	2.2	2.2	2.2	34.9		4	.7	6	4.8%	39.6	324,700		
26	40.2	3.4	1.6	.3	2.2	1.8	36		6.8	2.3	5	.9%	45	270,000	Atoxyl.	
Aug. 31	26.6	2.8	2.6	4	3.8	1.2	47.8		5.6	4.4	2	2.2%	57.8	285,000		
Sept. 4	33	2.4	1.8	1	1	.5	38.6		5.7	1.7	11	11	45.9	333,000		
28	31	2.6	.4	4.2	2.4	2	47		6	2	3	3%	55		X-rays.	
Oct.	40.8	3.6	2.4	10	3	.2	31.6		2.2	2.8	1	2	38.6	127,000		Oct. 21 to Nov. 4. X-rays stopped. Tip of spleen only to be felt in descent.
Nov.	45.3	4.8	1	6.2	2.4	2.2	27.7		13.	1	4.8	1.5	30	60,000	X-rays 48 times.	
Dec.	47.8	15.3	7.4	3.4	3	3	13		2.6	1.4	4	1	17			
1909.																
Jan.	60	16	4.5	2	7.5	5	1.5		2	.5	1.5	.2	4	17,000 7,200		
Feb.	65	18.6	8.6	.4	3.8	2.2	.8				2		.8	12,000	Spleen remained small.	
Mar.	60	18	7.5	.2	5.8	3	.9				2.5	.3	.9	12,400		

TABLE IV. CASE 2.—DIFFERENTIAL COUNT OF WHITE CELLS (PERCENTAGES).

Date.	pmn.	s.l.	l.l.	t.	e.	b.	f.g. my.	deg. my.	e. my.	b. my.	Undiffd. lymphoid cells and mono-nuclears.	nblts. mblts. 500 Whites.	my. %	Total Whites.		
1909. June	64.6	19	5	2.5	2.6	2.7	1			.2	2		1.2	12,400		Spleen remained small.
July	56.5	18.7	2.6	4	2.6	2	5.4		1.4	1.3	5.2		7.9	12,000		
Sept.	50.2	15.4	1.2	3.5	5.5	5	10.7		.2	.7	5.2		11.6	31,800		
Oct.	52.5	7.5	4.4	3.8	2.2	1.5	15.4		.7	.1	10		16.2	28,800	X-rays 40 times.	
Dec.	33.5	12.5	4.2	2.7	.75	5	16.5	12.2	1.7	1.7	7.5		32	69,600		
1910. Jan.	36	6.3	1	3.6	1	2.3	16	27.3	1	1	4.3	.3	45	73,000		
Feb.	40	3.1	.6	4	1.5	3.4	10.3	18.7	4.7	2.2	11.5	.3	35.9			Spleen very slightly increased.
Mar. 1	35.5	5	3.6	3	1.6	4	11.3	18.2	2.8	2.5	11.4	.3	34.9	129,600		
May 1	38.5	3	2.4	5	1.4	2.4	32.4		3.6	1.6	7.6	3.8		232,000		
June 1	34.6	3	.44	4.6	1.3	3.7	16.4	27	2.2	2	4.6	4.6	47.6	146,000		

became worse, but never so bad as on first admission. As she felt weak and ill, she was admitted to hospital in February. There being no signs of improvement under the X-rays, these were stopped on March 10th. The spleen began to slowly enlarge again at the end of February, and is now about 4 to 5 inches below the ribs, about a third of its size on first admission. In general condition and strength she improved with rest in bed and a course of arsenic in moderate doses, and was able to leave the hospital in May. She is now in moderate health, is fat, suffers no pain, but is weak, complains of shortness of breath, and is not able to do very much.

TABLE V. CASE 2.

TOTAL NUMBER OF DIFFERENT FORMS OF WHITE CELLS PER C.M.

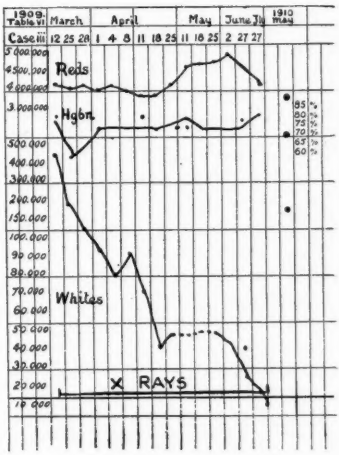
	Total Whites.	January, 1909.	October, 1909.	May, 1910.
July, 1908	270,000	9,200	28,800	232,000
pmn.	108,000	6,080	15,120	86,220
s.l.	9,180	1,656	2,160	6,960
l.l.	4,000	791	1,267	5,568
e.	5,940	349	638	3,248
b.	4,200	213	432	5,568
f.g. my.	97,200	92	4,455	74,168
e.m.	15,120		201	8,252
b.m.	5,950	8.5	28.8	3,400
Undiffd.	13,500	184	2,880	1,753
Transitional ..	900	340	1,100	11,600

Case 3.—Seen March 12th, 1910. J. B., a man, aged 53. He had always enjoyed good health, and had never had syphilis or any severe illness. Four months previously he lost the left eye from irido-cyclitis, and since then had not taken his usual amount of exercise. Lately he had felt weak with a feeling of weight in the left side of abdomen, and whilst being examined during an attack of vomiting the large spleen was discovered. He was a stout and healthy-looking man.

Appetite, good; bowels, regular; tongue, clean; pulse, 80, regular; temperature, normal; thoracic organs, normal. No enlarged glands anywhere detected, Abdomen was prominent and full. The liver, enlarged, smooth, not tender, its edge came 3 inches below the ribs. Spleen very large, smooth, firm, not painful, it occupied nearly the whole of the left side of abdomen, reaching to iliac crest below, and to 1 inch from umbilicus; it measured 7½ inches in vertical (nipple) line from lower border of ribs and 10¾ inches in transverse diameter. No ascites. The condition of the blood is given in the charts.

On March 19th treatment by X-rays was begun. The case was complicated by glycosuria. The urine, 30 ounces per diem,

TABLE VI.



sp. gr. 1035, no albumin; sugar, 9 per cent.; urea, 2 per cent. After X-rays copious deposit of urates and some uric acid crystals. No diacetic acid or acetone present.

On April 1st he felt a difference in the size and weight of the spleen. Its anterior edge was now 3 inches from umbilicus, vertical diameter 5½ inches from lower border of ribs, transverse 9½ inches. Urine, 40 ounces, sp. gr. 1030, copious deposit of urates, no uric acid crystals. Urea, 3.5 per cent., no albumen, no sugar. The disappearance of sugar was due to his having been placed on a strict diet. No acetone or diacetic acid. Treatment by X-rays was continued until May 19th. The patient's general condition steadily improved during this time. The sp. gr. of the urine fell to about 1020; it contained no albumin or

TABLE VII. CASE 3.—DIFFERENTIAL COUNT OF WHITE CELLS (PERCENTAGES).

Date.	pmn.	s.l.	l.l.	t.	e.	b.	f.g. my.	deg. my.	e. my.	b. my.	Undiffd. lymphoid and l.m. cells.	Nuclear red cells.	my. %	Total Whites.		
1909.																
Mar. 12	30	3.5	3	2.8	2.7	4.5	47.5		2.6		5	3.5%	49.5	429,160	Spleen occupied left half abdomen, gradually diminished until tip only felt.	X-rays twice a week.
25	43	.7	.4	3	1.4	2	40.7		2.8	1.6	3.3	2.5%	45	191,875		
April 1	48.2	2.4	1.2	4	1.7	4	32		1.2	1	4.2	0	34.2	96,875		
4	57.6	2.8	1.6	5.4	2.6	6	20.5	4	.4	0	5.2	1	24.9	80,000		
8	47.8	2.8	1.2	3.2	1.6	6.8	32.8		1.4	.2	4.2		34.1	93,750		
11	47.2	3.2	1.2	4.2	1.4	5.8	24.4	4.8	1.4	.6	6	1%	31	73,500		
18	50	5	1.2	4.5	1.8	5	21.8	4.5	.3	.2	5		26.8	42,000		
25	54.4	5.2	1.4	3.6	1.6	6.4	18	4.6	.9	.2	3.6	1.5%	23.7	49,000		
May 2	64.6	3.4	.9	1.1	1.6	9	13	1.3	.2	.2	3.2	.4	14.7	39,000	May to July X-rays once a week.	
July 27	75.6	14.6	4.6	2	2.2	.4	2.				.6	0	.2	13,000		
1910.																
May 13	43	2	2	2.8	2.5	2	31	5.2	3	1.4	5	.5	40	131,440	Spleen as at first.	

	Date.	pmn.	s.l.	Undiffd. cells.	t.	e.	Total Whites.
CASE 4.	Nov. 15..	26.6	32.6	18.7 17.7 (37.4)	2.5	1	14,000
	April 19..	23.5	36	33.75	4.25	1.5	7,500

sugar, and the urates and uric acid, at first deposited in large quantities, disappeared. The quantity passed averaged 50 ounces daily, and contained from 3 to 4 per cent. urea. The spleen on May 2nd measured 5 inches in the vertical (from lower border of ribs) and 8 inches in transverse diameter. There was considerable bronzing of the skin over the body generally, especially over the abdomen and splenic regions, over the area where X-rays were applied. On July 27th he was in very fair health, and the tip of the spleen only could be felt about 2 inches below the ribs. He remained well for some time, and was not seen again until May 13th, 1910. He had then been gradually going back for the previous two or three months, feeling drowsy and languid. Tables 6 and 7 show the deterioration of the blood-state. There was now slight œdema of the legs. The knee-jerks were absent. He had relaxed the dietary restrictions, and the urine contained 10 per cent. sugar, a faint trace of albumin; no acetone or diacetic acid. The spleen had again greatly enlarged, its anterior edge being 2½ inches from umbilicus, lower edge 1 inch above iliac crest, measuring 6½ inches in vertical and 10½ in transverse diameter. No ascites. Liver as before. He now resumed treatment once a week by X-rays.

For comparison with the foregoing cases of myeloid leukæmia, the following case of a not very common form of chronic lymphatic leukæmia (lymphæmia) is interesting.

Case 4.—E. B., aged 46, an athletic man leading a healthy country life, was seen in November, 1909. Some years ago he had an attack of gout, and since then has kept to a very restricted diet, perhaps insufficient for his needs. He occasionally gets sore throat, but has been better in that respect lately. Five months previously he first noticed enlarged glands on the left side of his neck. No other illness. Appearance, healthy; thoracic and abdominal organs, healthy; spleen not felt; no ascites; urine normal. Numerous enlarged glands were felt on both sides of neck, superior and inferior cervical glands, mostly about size of hazel-nut to almond; some were as small as a pea, firm, hard, discrete, not tender. Skin over enlarged glands normal. Similar enlarged glands were found in both axillæ, groins, and on both sides of the chest. There was no evidence of enlargement of mediastinal or abdominal glands. No tenderness of long bones.

Blood.—Red cells, 3,800,000 to c. mm.; hæmoglobin, 75 per cent. The number of whites was not large, 10,000 to c.m.m. Table VII, Case 4, gives the differential count, which was characteristic of lymphatic leukæmia. The mononuclears comprised 70 per cent., of which nearly half had the characteristics of the small lymphocyte; the others were larger, corresponding to the undifferentiated lymphoid cell, or characteristic cell of

lymphatic leukæmia. In about half of these the nucleus was mulberry-shaped, indented or nodular, and in many was actively dividing. The very large mononuclears found in acute lymphæmia were absent.

April, 1910.—He had been treated by X-rays to the glands once a week for three months. On account of his work keeping him in the country, he had not been able to get the treatment more often. In addition, he had taken arsenic for one month, but had then been obliged to desist from digestive disturbance, and then took phosphorus. He had kept fairly well, and gained one stone in weight. He had had an occasional slight epistaxis. The enlarged glands were still to be felt in the same situations, but were decidedly smaller and harder. Examination of blood gave red cells 3,100,000, whites 8,000 to c.m.m.. Hæmoglobin, 80 per cent. The differential count of whites is given in the table. It is practically unchanged, the mononuclears being 69.75 per cent. The effect of the X-rays in this case has been that the total number of whites has diminished, possibly due to destruction of cells in the glands; but their essential character, and departure from the normal, remained unaltered. The fall in the number of red cells, though not very great, was sufficiently marked to be an unfavourable omen. The X-rays had been discontinued for about eight weeks previous to my second examination, and therefore their effect should have passed off if the diminution in the reds was due to them.

With regard to the mode of application of the X-rays, Dr. W. K. Wills, to whom I am much indebted for his careful treatment of the first three cases, tells me that Case 2, from September 12th to December 8th, 1908, was treated by forty-eight exposures with the high tube at 6-in. distance, for ten minutes at a time daily over the spleen and long bones of extremities. Screens were used, and the rays filtered through six layers of thick boiler felt. The second course was forty-one exposures, on alternate days, of a third of a pastille dose over spleen, arms, legs and spine.

Case 3 was treated from March 20th to May 19th twice each week, for ten to twelve minutes each time, over the splenic area and long bones, through the ordinary clothes, with the high tube (alternating spark gap six inches).

In both cases the first improvement was in loss of the feeling of lassitude and fatigue on slight exertion. There was a gain in strength and general well-being. The effect on the blood condition

can be seen from the charts, which show a rapid diminution in all kinds of white cells. With the fall in the number of myelocytes the polymorphonuclears, small and large lymphocytes, and in less degree the eosinophils, show a relative increase, and a more or less complete return to their proper proportions in the differential count. This can also be seen from Table V, which gives the total numbers of white cells respectively per c.m.

With regard to the spleen, in both cases it offered a remarkable diminution in size, and this occurred with the fall in the number of white cells. This is not a constant feature in the treatment of leukæmia by X-rays. As the first case shows, there may be little or no alteration in the splenic tumour. Further, as the condition of the blood began again to revert to the leukæmic state, the spleen slowly began to enlarge, but in Case 2 the blood-condition showed a marked deterioration before the spleen gave decided evidence of fresh enlargement. It is perhaps legitimate to infer from this that the morbid blood-state advances to some degree in myeloid leukæmia before there is any marked enlargement of the spleen. A further point to be noticed is that the resumption of treatment by X-rays in Case 3 after the relapse had practically no effect.

Case 3 was complicated with glycosuria of considerable amount, probably an accidental complication. I have not met with it before in leukæmia. The glycosuria readily cleared up on cutting off carbohydrates from the diet. It seemed to make no difference to the X-ray treatment. On account of the large proportion of proteid in the diet, the urine whilst he was under the X-rays deposited an enormous amount of amorphous urates. The urea varied from 3 to 4 per cent., and the quantity of urine averaged from 45 to 50 ounces daily. No acetone or diacetic acid was present.

Estimated on the seventh and fourteenth days after the commencement of X-ray treatment, the amounts of N. in the food were respectively 17.6 and 22.3 grammes, and in the urine estimated as urea, 13.5 and 20 grammes. On the second occasion he was on a full diabetic diet, the total calories being 2,397, and

his weight 67 kilos. The weight remained stationary at this level whilst under treatment.

To the above remarks about the blood it should be added that during the treatment by X-rays a very large number of degenerate white cells appeared in the blood, both myelocytes and polymorphonuclears. Other cells of both these varieties appeared to be irregularly and imperfectly formed. From both causes it was sometimes difficult to know to which group to assign a particular cell. The altered polymorphonuclears were comparatively to the myelocytes easy to recognise. Some of the polymorphonuclears showed fragmentation of nucleus, irregularity in size and shape of cells, and variations as regards granules, Many of the myelocytes showed irregularity in size and shape of nuclei, many being deeply indented, multilobular, or distorted. The cell bodies were irregular, a few contained azure granules, others were vacuolated, and some were faintly-staining phantoms, or had a film-like, disintegrating cytoplasm. The red cells showed less change, but there were many small cells, and some variation in depth of staining. Some of the eosinophil cells showed a few large granules staining deep purple amongst the ordinary granules.

In conclusion, these cases confirm the experience of other observers, that although X-ray treatment does not, unfortunately, result in cure in leukæmia, it gives a greater measure of relief in most cases than is derived from any other form of treatment, and prolongs life. If ordinary precautions are taken, and a careful watch kept on the state of the blood as regards the red cells and hæmoglobin, and on the condition of the urine throughout the period of treatment, it seems to be devoid of danger. The presence of a slight albuminuria in the first case and of marked glycosuria in the third seemed to form no contra-indication to X-ray treatment, as they gave no trouble. The experiments of Mosso and Milchener quoted above show that the X-rays should be applied over the long bones and vertebræ as well as over the spleen.

I am much indebted to Professor Emrys-Roberts for his aid in the blood examinations.

A BRIEF ACCOUNT OF SPLENECTOMY WITH A CASE OF SIMPLE HYPERTROPHY OF THE SPLEEN TREATED BY OPERATION.

BY

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AMONGST Greek and Roman athletes it was commonly supposed that the presence of the spleen was a hindrance to their power of running, and they used certain drugs which were thought to have the effect of diminishing or dissolving the organ. With the same object Hippocrates advised the application of a preparation of mushrooms.

In support of this supposed influence of the spleen some surgeons sprang into notoriety about 1700 from their operations of removing the milt or spleen—"unmilting," as it was then called—in order to improve the wind of the individual. Dionis, writing in 1733, speaks plainly on the foolishness of "these cruel operations, which, owing their existence to some crude brains, found a sepulture in that of their inventors." A survival of the practice exists to-day in the French proverb, "Courir comme un dérate."

Zaccarelli is said to have successfully removed the spleen for disease in 1549, and Matthias performed a similar operation for prolapse through a parietal wound from a stab in 1678; but the introduction of splenectomy into modern surgery may be said to date from 1867, when Péan successfully excised an enlarged and cystic spleen in a woman twenty years of age.

In 1895 Dr. Richard Douglas published a list of 194 splenectomies which he had collected. For leucocythæmic spleen there were thirty-six operations, with thirty-one deaths; for simple hypertrophy fifty-nine operations, with twenty-five deaths; for neoplasms, five operations with three deaths; for hydatids, six operations with two deaths; for wounds,

forty-three operations with eleven deaths. In 1900 Hagen collected 360 cases of splenectomy, with 138 deaths, a mortality of 38 per cent.; but the mortality before 1890 was 42 per cent., and dropped to 19 per cent. between 1890 and 1900. This diminution in mortality is largely owing to the recognition of the fact that splenectomy in leucocythemia is, as Bryant puts it, "physiologically unsound and surgically unsafe"; for even in those few cases that have survived the operation there is no evidence that the patients have derived any benefit from its performance.

Speaking generally, the operation of splenectomy offers the best chance of permanent success when the disease is primarily splenic, and it should not be performed in general constitutional disorders of which the splenic enlargement is only a local and secondary manifestation.

For traumatic lesions, wandering spleen, simple and malarial hypertrophy, cysts, abscess, sarcoma, primary tuberculosis and Banti's disease, operation is justifiable; but for myelogenous and lymphatic leukæmia, Hodgkin's disease, amyloid degeneration, syphilis, and the chronic enlargement of the spleen which occurs in infancy, the operation should be avoided.

Before deciding on operation an examination of the blood is necessary in most cases, in order that certain general diseases may be excluded. Splenectomy is the operation of choice, for it is generally safer to remove the whole organ than to adopt conservative operative measures.

Though many cases of splenectomy are on record, very few occur in the practice of any individual surgeon, and therefore the following case of simple hypertrophy is given as an example of one of the conditions for which operation is justifiable.

M.J., female, aged 26 years, was sent to me by Dr. Haslett, of Pontypool, in August, 1902. She had then recently had an attack of jaundice, and during that time the tumour was discovered in the left side of the abdomen. There was some pain over the swelling, and the patient complained of slight shortness of breath for the previous fortnight. Marked anorexia. She was rather spare, and apparently not anæmic. Occupying

practically the whole of the left side of the abdomen was a smooth, movable, firm tumour, springing from the left hypochondrium, but capable of being pushed towards the pelvis, so that the top of the tumour could be felt. The anterior edge of the swelling could be taken between the fingers, and along this border, about two inches below the umbilicus, a distinct notch was palpable. The tumour was dull on percussion, though there was some resonance in the loin behind the tumour. The liver was not enlarged, and there was no enlargement of any lymphatic glands. The heart and lungs were normal. A diagnosis was made of simple hypertrophy of the spleen. Operation was not considered necessary unless the tumour gave trouble, and iron, arsenic, etc., were prescribed.

The patient did not come again until September, 1909, when she stated that she had had occasional pain in the left side of the abdomen since 1902, but that during the past two months it had been very much worse, and the swelling had been getting larger. The pain down the left side of abdomen now occurred almost daily, and she was prevented from getting about with comfort. There had been two slight attacks of jaundice since her last visit. The general condition of the patient was much the same as before, but the tumour had slightly increased in size. A blood count showed 7,200 white cells, of which 85.5 per cent. were polymorphonuclears and 14.5 per cent. were lymphocytes.

On September 24th, 1909, the spleen was removed through an incision in the left semilunar line. The pedicle was ligatured in three portions with silk, and another ligature was tied round the whole pedicle after removal of the spleen. The abdomen was closed in layers without drainage. After operation the pulse rose to 128 per minute, and continuous saline injections were given per rectum. The temperature was raised to 100°—101° for about a fortnight, and there was slight jaundice for about a month. The patient went home about five weeks after operation, and has continued well since.

An examination of the blood three days after operation showed :—

Red blood cells	2,160,000
White blood cells	23,800
Polymorphonuclears	82 per cent.
Transitionals	3 per cent.
Large lymphocytes	3 per cent.
Small lymphocytes	11 per cent.
Eosinophils	1 per cent.

Before the patient left the red cells had risen to 5,000,000, and the white cells had dropped to 16,250.

The tumour weighed 1 lb. 13 oz. after some ounces of blood had drained away from it. Dr. Walker Hall reported on its

structure as follows :—" There is general hypertrophy of all the tissues. No sign of lymphadenomatous change, no evidence of any growth. Capsule and trabeculæ thickened. Follicles swollen and active. Splenic pulp rather more hemorrhagic than usual. One or two small foci of calcareous deposit. The cells seem of the usual varieties."

The irregular temperature which occurred after operation in this case has been noted by other observers, and the diminution in the number of red blood cells and increase in the number of white cells referred to above seems to be a fairly common occurrence which lasts, on an average, about two months.

The intermittent attacks of jaundice from which the patient suffered has also been found in other cases, especially when splenoptosis has existed.

Considering the spleen is normally a somewhat fixed organ, it is surprising what an amount of mobility it may acquire. It is quite common for a wandering spleen to be found in the true pelvis, and its ability to travel into different parts of the abdomen has often been the cause of diagnostic errors.

For the correct appreciation of splenic disorders it is therefore necessary to exclude other abdominal organs, particularly the ovaries and left kidney, aided by the recognition of the characteristic notch and shape of the spleen.

Kelly truly says that no operator should remove a spleen without a previous general and searching examination, while a knowledge of the blood-findings is especially imperative.

RADIOGRAPHIC ESTIMATION OF SIMPLE ENLARGEMENT BY MEANS OF VISIBLE SHADOWS.

BY

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BY simple hypertrophy of an internal organ is meant proportionate increase in size without alteration in shape, the enlarged organ being a model of the unenlarged. Whether, strictly speaking, any organ can become enlarged simply without

some alteration in the way of tilting or rotation, and apart from some alteration in external shape and the interior disposition of its own parts, is questionable. It has often to be assumed that it can in the first instance, and it is so assumed for my present purpose.

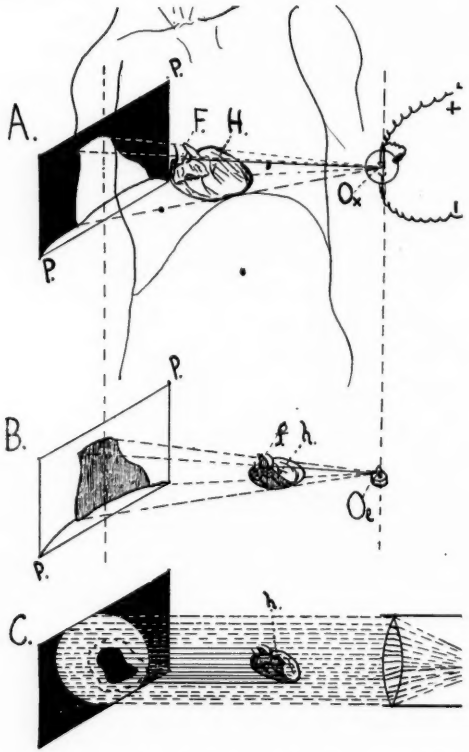
In such a case as that of the heart, at any rate, every point or small part except one must occupy a different position in the enlarged organ in reference to surrounding structures than it did before enlargement; every point without exception may do so. Here again in the first instance—as in this paper—it may be safely assumed that one small part of the enlarged organ—the "fixed point" or "centre of enlargement" of a former paper of mine[1] occupies the same relative position to adjacent structures as it did in the organ while still normal in size.

If an orthodiagraphic tracing be taken of a simple hypertrophied heart and another of a normal heart, it is at once concluded from the definition of simple hypertrophy and from the nature of the projection of such a very definitely shaped organ as the heart is, that any dimension we please of the enlarged heart has the same proportion to the corresponding dimension in the normal heart that the distance between any two points on the larger tracing has to the distance between the two corresponding points in the smaller. We can directly measure these two distances on the tracings, and need further to know only the length of the particular dimension chosen in the normal heart in order to obtain the actual length desired of the chosen dimension in the enlarged heart.

Instead of taking a second orthodiagraphic tracing of the normal chest and its contained heart, it seems to me feasible to throw a visible shadow of a normal heart or a model thereof in the open by a beam of parallel rays of ordinary light, parallel to the original direction of the orthodiagraphic X-ray, arranging for convenience that the visible shadow lies concentrically within the orthodiagraphic tracing, thus securing almost directly the same result as in the previous paragraph. By a little manipulation of

1 "The Principle of Proportional Representation in Clinical Radiography," *Practitioner*, 1909, lxxxii, 413.

the movable testing heart in the open it would be easy to detect by imitation any tilting or twisting of the enlarged heart out of reach within the body, and failure to secure concentricity of the visible shadow with the tracing under these latter manœuvres would be diagnostic of some real change of shape in the hypertrophied heart under examination. (See diagram C, where h is the model heart).



I believe there are few of these results that cannot be as readily obtained from an ordinary radiogram of the cardiac region by the use of a visible shadow of a model heart, if only we can determine by anatomico-pathological study of, say, frozen sections the

identity and actual position in regard to surrounding structures of the " fixed point " in the case of the heart, and observe certain other precautions. The determination of the position of a " fixed point " must be in many cases of enlargement of the heart unnecessary ; as where, for instance, the centre of an expansile impulse in the neighbourhood of the left nipple gives us the position of the apex of the heart, after allowance is made for the thickness of the chest wall in the direction of projection.

Geometrically it can be proved when any two similar trebly extended figures of different sizes are in perspective, the distance between any two points in the one is to the distance between the two corresponding points in the other as the distance of any point whatever in the first from the centre of perspective is to the distance of that corresponding point in the other from the centre of perspective. Algebraically, if MN be any distance in the larger, and mn the corresponding distance in the smaller, and if F and f be any other corresponding points whatever, and O be the centre of perspective, then $\frac{MN}{mn} = \frac{FO}{fO}$. Any three of these being known, the fourth can be at once found.

In Diagrams A and B I have endeavoured to show the procedure in the case of an ordinary radiogram corresponding to the procedures shown in C with an orthodiagraphic tracing.

In A, PP is the plane of delineation, H is the simply hypertrophied heart within the body, O_x is the radiographic centre of emission of X-rays, F is the hypothetical " fixed point " of H (but, as I have said, the palpable apex of the heart H would often do as well). In B, PP is the plane of delineation as before in the same relative position to the centre of radiation. In this case PP is a tracing of the radiogram on the back of a print taken from the original developed negative by contact printing in the ordinary way.

O_l is a small luminous flame, in the exact position as regards PP as O_x was in. We may say, therefore, $O_x = O_l = O$; h is the movable model in the open, and f its " fixed point."

Now, from the nature of radiant projection, when the outline of the visible shadow of h coincides with the X-ray shadow of H,

then we know that H and h, two presumably similar figures, are in the same perspective. Geometrically in accordance with the immediately previous consideration, $\frac{MN}{mn} = \frac{FO}{fO}$. Now mn and fo are directly measurable, and FO by hypothesis is calculable, and MN can then be found. If we take the palpable apex of H instead of F, then the formula becomes $\frac{MN}{mn} = \frac{AO}{aO}$, when mn and ao are directly measureable and AO is practically so, and A and a are the respective apices.

In the case of the radiogram, as well as in the case of the orthodiagram, the tilting of the model will give a good idea of any actual tilting or torsion of the hypertrophied organ out of reach, while likewise failure of coincidence of any part of the outline of the visible shadow with the traced radiogram on the plane of delineation, will lead to the diagnosis of some real alteration in shape.

In using the fluorescent screen instead of the developed radiogram of H, various modifications would be requisite in the procedure, the principle remaining the same. Some very subtle pitfalls would need to be shunned; but the object of this paper is not to elaborate details, but to explain a principle of procedure. Nor is it my present object to show how the position of the "fixed point" is to be determined. Clinically it may not be found to exist; but if it is a pathological entity, then if no better plan of determining it practically be found, I am prepared to show how it may be found in any given instance by a simple extension of the method of visible shadows suggested in this paper.

So far as the very theoretical considerations of this paper are correct under the assumptions set forth, they ought to suggest improvements in the matter of increased simplicity in practical diagnosis by means of X-rays; and it is with this intention I submit my suggestions with regard to the solution of an important clinical problem to other workers who have larger technical opportunities and more clinical leisure than myself.

A CASE OF ANOMALOUS CUTANEOUS ERUPTION SHOWING A BACILLUS MORPHOLOGICALLY CORRESPONDING WITH THE KLEBS-LŒFFLER, AND CLEARING UP UNDER DIPHTHERITIC ANTITOXIN.

BY

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THE part the diphtheria-carrier plays in the production of epidemics has only lately been investigated, and it has been found that the infective agent has remained almost indefinitely in the nasal passages, or in otorrhœal discharges, in spite of all endeavours to disinfect. Upon these chronic infections the use of antitoxin seems to have little or no effect. On the other hand, immunity to the diphtheritic toxin seems to be conferred upon the carrier himself, his own yield of antitoxin being no doubt sufficient to counteract the toxin absorbed from the nasal passages, etc.

That the nasal passages or the ear should form such a nidus does not seem wonderful, considering the impossibility, apart from extensive operative procedure, of reaching the various cells and sinuses which harbour the infection. That the skin should become infected by the Klebs-Lœffler bacillus is readily understood, and it is a matter of fairly common experience to find abrasions and cuts with false membranes during an attack of diphtheria, or even affording the portal of entry of the infection. These infections, however, partake of the nature of an acute infection, they are followed by toxic symptoms, and are amenable to local disinfection. It has only lately come to our knowledge that cutaneous eruptions may harbour, or perhaps even be caused by, the Klebs-Lœffler bacillus.

Slater[1] quotes such a case where the bacillus of diphtheria

[1] *Lancet*, 1908, i, 15.

in a strain the toxicity of which was proved by its lethal effect upon a guinea-pig in ten days, was recovered from a vesicular, cutaneous eruption. No antiseptic used was sufficient to disinfect the lesions, although they were so superficial as to heal eventually without scarring. Altogether the patient had had the cutaneous eruption for three years without constitutional symptoms, and it was only when diphtheritic antitoxin was administered that any appreciable improvement occurred. This improvement, which set in after the first dose of 2,000 units of antitoxin, was only temporary, and seven subsequent doses were required before the tendency for the rash to recrudesce was arrested, and before growth failed to occur in inoculated tubes. The spleen was not enlarged, the heart was normal, and there was no albuminuria.

Eddowes[1] quotes a similar case in a girl æt. 11, who presented severe ecthymatous bullæ on the arms, hands and lips. There were traces of a ruptured vesicle in the anterior pillar of the fauces, but no false membrane. Klebs-Lœffler bacilli were obtained from the lesions, and proved lethal to a guinea-pig in twenty-seven hours. This patient recovered without antitoxin.

The case which we wish to present is unfortunately imperfect in one important respect, viz. the toxicity test, but yet, notwithstanding, it seems to be of sufficient interest to warrant publication, if only for the purpose of drawing further attention to the part that diphtheria may play in maintaining cutaneous eruptions over protracted periods, without the specific toxic effects expected with diphtheria. One very important point, if no other, is established by this case, viz. that although the absorption of toxin must be continuous throughout the disease and the consequent manufacture of sufficient antitoxin to prevent specific toxic symptoms, the use of antitoxin, given hypodermically, was attended by instant improvement in the cutaneous eruption.

The following notes have been kindly communicated by Dr. Elliott Glenny, who was originally in charge of the case :—

[1] *Lancet*, 1908, i, 282.

J. P., æt. 6, showing profuse pustulo-vesicular rash from which was recovered a bacillus morphologically indistinguishable from the Klebs-Læffler B. diphtheriæ, and which cleared up after the use of diphtheritic antitoxin.

(*Photo. by* Dr. FLETCHER.)

J.P., 6 years old, was brought under observation for enlarged glands in the neck on December 16th, 1909.

His previous history shows that he had, six months ago, "an abscess which discharged through the right nostril." Since then glands have slowly increased in size on the left side of the neck without obviously affecting the general health.

On December 16th a slight follicular tonsillitis was observed on the left side. This was not attended with pyrexia or alteration of the general condition, and the patient "enjoyed his games and sang with the other children." The throat was swabbed twice daily with 1 in 60 carbolic acid, and potassium chlorate and ferric chloride were given internally.

The glands gradually increased during the next six weeks, and fluctuated, threatening once or twice to break down. The left tonsil slowly changed its appearance from a follicular tonsillitis to a punched-out ulcer.

At the beginning of February the throat began to be painful, and tablets of menthaform were substituted for the carbolic swabbing.

In the middle of February the skin over the shoulders became *scaly*, and this condition spread in a couple of weeks to the whole trunk, and to a lesser extent to the thighs, arms, neck and face, but not involving the hands, feet or scalp. By the end of the month, while the scaly condition was extending, the parts first involved were showing more inflammatory changes, and a small amount of serous discharge appeared, and the scales were shed, leaving a raw surface. At the end of the first week of March the whole of the trunk had become "raw," the conjunctiva had become involved, the gums and lips were also ulcerated, and the whole condition of the child most pitiable. The discharge had soon become purulent and offensive, but no local treatment seemed in any way to allay the symptoms. The temperature was of a septic type, but did not run very high.

It was at this time that I was asked to see the case, and I found him presenting the appearance of a profound toxæmia. His face was pallid, with sores round the lips, which were swollen. He had a dressing over the glands behind the left ear on account of suppuration. He seemed listless and apathetic, but would answer questions. Occupying the back, chest and abdomen for the most part, with a few scattered lesions on the face and limbs, was a copious vesiculo-pustular rash. On the margins of the efflorescence the lesions were markedly discrete and of a conical shape with a depressed centre. This was due to their being formed round the pilo-sebaceous follicles. Most of the lesions were pustular, though some were papular, while in the centre of the affected areas were crusts and erosions. The intervening skin was in parts darkly erythematous, but round the more recent pustules there was only a narrow erythematous ring. In some there were evidences of hemorrhage.

Inside the mouth there were one or two shallow ulcers, situated on the lips and soft palate. One of these had a greyish pellicle, which suggested to my mind that there might be a diphtheritic infection. There was a central streak of hemorrhage on the uvula. There was conjunctivitis of both eyes, the left being the worse, but the exudate was not characteristic of diphtheria.

Cultures were made from the throat lesions, from the nose, eye, and the skin lesions, and all were returned "positive Klebs-Lœffler." The patient was accordingly admitted into Ham Green Fever Hospital.

March 8th, 1910.—On admission Dr. Fletcher, to whom I am indebted for these notes, injected 10,000 units of antitoxin, and upon the bacteriological report accompanying the case he investigated the bacteriology, and found :—

Nose (Toluidine) ..	Fairly long, bipolar-stained bacilli, some only unipolar.
,, (Lœffler)	Long and short granular bacilli, diplococci.
Eye (Toluidine) ..	Shorter granular bacilli, bipolar and unipolar.
,, (Lœffler)	Long granular bipolar bacilli, diplo- and ordinary cocci.
Throat (Toluidine) ..	Long and short granular bacilli, and diplococci.
,, (Lœffler) ..	do. do.
Skin (Lœffler)	Granular bacilli and cocci.

Almost immediately improvement began to set in after the antitoxin. The conjunctivæ were less infected and less discharge from skin.

March 11th.—2,000 units antitoxin injected. Temperature 100° to 102°.

,, 13th.—Inflammatory reaction of eruption much less, and clearer. Still a few bleeding points on back. Upper lip shows less swelling, and mucous membrane healing. Antitoxin 2,000 units. Temperature normal.

,, 15th.—Antitoxin 2,000 units.

,, 17th.—Eruption healing rapidly, and much cleaner. No exudation or bleeding points. Temperature remains about 99°.

,, 22nd.—Antitoxin 2,000 units. Temperature has risen to 102°.

,, 23rd.—Antitoxin, rash on legs. Faint mitral systolic murmur. Interval, and second sound rather shortened.

,, 28th.—Distinct croupy cough. Colour not so good. Eruption on head worse. Antitoxin 2,000 units.

March 30th.—Harsh, mitral systolic murmur. *Lungs:* Right lung bronchitic, tubular breathing at apex, no dulness. Temperature rising to 104°.

After this time no antitoxin was given, and the patient has shown signs of consolidation of apices of lungs. There was a slight recrudescence of the eruption at the root of the neck and lower part of back on April 2nd, which has improved without further doses of antitoxin.

I saw the boy on March 26th, and was astonished at the improvement not only in the general condition, but in that of the skin. All the pustules on back and front had disappeared, leaving only deeply-pigmented, discrete maculæ. There was some impetiginous rash on the head, of a different nature, in my opinion, from that on the body. This was still persisting slightly.

The local treatment had comprised boric ointment and zinc and mercury ointment applied on lint.

While well aware that this report will be open to the criticism that there is no proof that the Klebs-Lœffler was the causal agent of the cutaneous trouble, I am yet of opinion that the rapid relief of the cutaneous condition by means of the antitoxin injections is of sufficient interest to warrant its publication, and am also of the impression that the cutaneous rash was at least maintained by, if not produced by, the same cause as the mucous membrane ulcerations, all of which have cleared up.

I have to thank Drs. Glenny and Fletcher for their kindness in allowing me to make free use of their notes. Also I am indebted to Dr. Fletcher for the accompanying photographs, taken on March 14th.

Progress of the Medical Sciences.

MEDICINE.

Further experiments have recently been made by Edmunds[1] with a view of ascertaining if there is any difference in function between the **thyroid and parathyroid glands.** These experiments tend to support the view previously held, that the functions of the parathyroid differ materially from those of the thyroid, and further, that parathyroids do not change into thyroid tissue even when left in animals in whom there is great thyroid insufficiency. Other experiments on his part confirm the view that if a large

amount of calcium is given, or if the animals are fed mainly on milk, the symptoms following total thyroidectomy are mitigated, the percentage of recoveries after thyroidectomy being considerably increased.

Jean V. Cooke [2] has carried out a series of experiments on the excretion of calcium and magnesium after parathyroidectomy. The magnesium content in normal dogs' brains was found to be practically the same as in those of dogs dying with tetany, while the calcium content of the brains of two dogs dying with tetany was slightly higher than that of the control dogs. After parathyroidectomy the calcium excretion in the urine did not differ markedly from that of a fasting period, while there was some increase in the excretion of magnesium. In two animals with tetany an excretion of diacetic acid in the urine was found, a phenomenon which had previously been observed by Underhill and Saiki after thyro-parathyroidectomy with development of tetany. With reference to the magnesium and calcium content of the brain, no very definite conclusions can be drawn from the small number of cases studied, but these experiments do not support the contention of MacCallum that the parathyroids exert a very potent influence on calcium metabolism. The calcium and magnesium content of the fæces of normal and parathyroidectomised dogs in these experiments of Cooke was found to be similar.

The subject of **thyroid inadequacy** is dealt with in a paper by Leonard Williams, [3] in which he draws attention to the importance of the thyroid gland in fixing the calcium salts in the body. He maintains that the thyroid hypertrophies in pregnant women, and that the influence of its secretion may assist bone formation in the fœtus. In some women this leads to such exhaustion of the gland that they cannot suckle, lactation depending on a due supply of the thyroid secretion. He regards the bony phenomena of rickets as due to thyroid insufficiency. Calcium salts do not arrest the disease, because in the absence of sufficient thyroid secretion the ingested calcium is not assimilated by the bones. He has obtained good results in rickets by the administration of thyroid, a notable example being the case of one of twins (the other being quite healthy), both of whom had been fed and brought up in the same way.

Some cases of **nocturnal enuresis,** adenoids and enlarged tonsils he regards as due to thyroid inadequacy, and he points out that a large percentage of these follow infantile febrile diseases, which were the cause of the depressed junction of the thyroid. In such cases delayed puberty may yield to thyroid extract. Dysmenorrhœa may also be cured by thyroid administration, as may also migrainous attacks occurring during menstruation.

Léopold Lévi and H. de Rothschild attach considerable

importance to what they call the eyebrow sign as evidence of thyroid inadequacy. This consists in the rarefaction or complete absence of the hair of the outer third of the eyebrow. Carious teeth and thin, delicate and friable nails are also symptoms. In their remarks on treatment, the authors state that thyroid extract acts very much better when administered in conjunction with iodine, arsenic, and calcium than by itself.

Some interesting observations and experiments on the so-called **thyroid carcinoma of the brook trout** and its relation to ordinary goitre have been made by D. Marine[4] and C. H. Lenhart. This disease is characterised by an abnormal and excessive growth of thyroid tissue which frequently forms visible tumours. Extreme degrees of the disease appear to be confined to the carnivorous fish reared in captivity. The observations were made in a large private hatchery. They regard the disease as one of endemic goitre and not as one of true cancer, giving ample reasons for this conclusion. Careful investigations were made into the conditions under which the fish of different ages lived. The authors were unable to find any grounds for regarding the disease as one of infectious origin. In this connection histological examinations have yielded negative results, and the fish will recover when placed in what is theoretically the most polluted water. On the other hand, the three factors of over-feeding, over-crowding, and limited water supply were considered to be directly concerned in the development of the disease, which they regarded as due to an abnormal stimulation of the thyroid, not by any single substance, whether the result of food decomposition or of excretory products, but as the result of the activity of a great variety of these. Iodine in the form of Lugol's solution added to the water in the trough effected cures. The same authors have carried out similar experiments on Lake Erie pike[5] with very similar findings. Carnivorous fish, like carnivorous mammals, are more frequently affected. Thus while changes are found in the pike they are absent in the carp. Stuart-Low[6] has removed the thyroid, or part of it, in cases of inoperative carcinoma, and reports a deterrent effect on the rate of growth of the primary tumour. The secondary glands also appear to be favourably influenced, becoming softer and less painful. In several cases the patient has put on weight, as much indeed as 15 lb. in five months being gained by a man who had previously been losing flesh.

REFERENCES.

[1] *J. Path. and Bacteriol.*, 1910, xiv, 288.
[2] *J. Exper. Med.*, 1910, xii, 45.
[3] *Med. Rev.*, 1910, xiii, 13.
[4] *J. Exper. Med.*, 1910, xii, 311.
[5] *Johns Hopkins Hosp. Bull.*, 1910, xxi, 95.
[6] *Lancet*, 1909, ii, 1138.

J. R. CHARLES.

SURGERY.

Hypophysectomy has now been performed a sufficient number of times for a rough estimate to be made of its usefulness as a remedy for certain disorders and of its difficulties and dangers. To assist in the formation of such an estimate, I have drawn up tables showing in brief outline the leading symptoms, pathology, operative technique, and results of operation in all those cases of hypophysectomy of which I have been able to find records in the library of the Bristol Medico-Chirurgical Society.

Broadly considered, the *indications* for the operation have been of the following three kinds :—

(1) The presence of symptoms and signs of pressure upon the optic chiasma.

(2) The presence of symptoms which are considered to show that the normal function of the anterior part of the hypophysis cerebri is disturbed.

(3) The presence of skiagraphic evidence that pressure changes have taken place in the sella turcica.

The indications of the second group are based upon the hypothesis that the syndrome of Pierre Marie, known as acromegaly, and also gigantism, are due to hyperpituitarism, and that the syndrome of Fröhlich, in which increased adiposity, anomalies of hair development and arrested sexual activity or development (infantilism) are the characteristic symptoms, is due to hypopituitarism. The appended tables have been drawn up with recognition of these distinct types of case, following von Eiselsberg and other writers on the subject.

The evidence which can be adduced in support of the above hypotheses with regard to pituitarism is not, however, free from confusion, especially perhaps in the case of acromegaly. In that affection the hypophysis is said to be often unchanged, though perhaps the observations in such cases have been mostly macroscopical and not microscopical.

Conversely, in many cases of tumour of the hypophysis there have been no signs of acromegaly. In at least one case of acromegaly[1] the pituitary gland was found completely destroyed by cysts and induration, a state of things hardly likely to be associated with increased function. Kocher in a case of acromegaly removed a round-celled sarcoma from the hypophysis (No. VI in the table), with the result that the characteristic symptoms of acromegaly materially improved. He remarks upon the difficulty of believing that the presence of an extensive soft sarcoma in the gland could have increased its functional out-put, and suggests as a possible explanation of the phenomena that the tumour had an indirect effect upon the infundibular region of the brain, in which region Erdheim has assumed a

[1] *Vide* Kocher, *Deutsche Ztschr. f. Chir.*, 1909, c. 30.

trophic centre to exist. Kocher also alludes to the fact that adiposity has been observed in cerebellar affections and in affections of the corpora quadrigemina, associated with increased pressure in the third ventricle. On the other hand, Cushing's case (No. VII in the table) supports the view that acromegaly is an expression of hyperpituitarism, for the portion of the gland removed yielded microscopical evidence of activity, and no tumour was present.

Cushing,[1] in conjunction with S. J. Crowe and J. Homans, has removed the whole or portions of the hypophysis from more than a hundred dogs. He found that for prolonged life it was essential to leave at least a fragment of the gland, and that after partial removal the animals became excessively fat, and in every instance showed marked atrophy of the organs of generation.

The improvement of patients with the Fröhlich type of symptoms, adiposity with infantilism, after evacuating cysts or removing tumours of the hypophysis, is naturally explained by assuming that the portions of gland left, having been relieved from pressure, have resumed their normal function.

It is interesting to note in this connection that Marburg[2] has brought forward facts which seem to show that the pineal gland is related to adiposity and sexual potency in the opposite sense to the pituitary gland, hypopinealism being associated with genital hypertrophy and hyperpinealism with adiposity.

The appended tables contain a brief summary of the facts concerning fourteen cases of trans-sphenoidal hypophysectomy. Two additional cases in which Cushing operated and two—one successful—in which Halsted (Chicago) operated are not included, the records being inaccessible. Also there have been operations of the kind, by Sir V. Horsley and others, by other routes. It will be noted that of the tabulated cases von Eiselsberg performed the operation in six, Hochenegg in three, and the other surgeons each in one case. The first case operated upon on the Continent was that of Schloffer in March, 1907.

Operative Mortality.—Reference to the column in the tables giving results will show that four of the fourteen patients died directly in consequence of the operation. This is a mortality of 28$\frac{4}{7}$ per cent. The causes of death were meningitis in two cases, status lymphaticus, etc., in one case, and aspiration-pneumonia in one. There had been much bleeding at the operation in the last case. Case XI nearly ended in death, for the patient had violent meningitis at the end of a week. Obviously the operation is one which at present is attended with grave risk.

Hochenegg,[3] from the point of view of operative prognosis, divides cases of pituitary tumour into the following classes :—

[1] *Ann. Surg.*, 1909, l, 1002.
[2] *Vide* Kocher, *op. cit.*
[3] *Deutsche Ztschr. f. Chir.*, 1909, c. 317.

(1) Those in which there is a small tumour growing towards the sella and the sella is bridged over above by dura mater. In these there is a possibility of totally removing the tumour by the nasal route.

(2) Those in which the tumour fills the sella and also has a more or less widespread endocranial extension. In some of these cases it may be possible to relieve intracranial pressure by partial removal of the growth with improvement of vision and other symptoms; but in others, in which the greatest part of the tumour is in the brain above the sella, exposure of the tumour by the nasal route will be harmful, injuring the growth and setting up meningitis.

Unfortunately, it is impossible to tell beforehand which are the cases with extension and which are not. Case V is an instance in point. The patient was apparently in an early stage of the disease, was up and about and able to work, and yet the tumour had involved the frontal lobes extensively. Cases II and VI also belong to this group.

As Hochenegg points out, it is almost a matter of luck whether one operates upon a case belonging to the first or the second of the two classes described above, for the present methods of diagnosis do not enable one to distinguish the operable from the inoperable class, and improved technique will not diminish this difficulty. Possibly a preliminary exploration by the intracranial method would be the best in some doubtful cases.

Results in the cases recovering from the operation.—These are interesting and encouraging. The characteristic symptoms of acromegaly have been ameliorated, vision has improved, the hands, feet and head have become smaller, sometimes noticeably so a few days after the operation. In the cases of adiposo-genital degeneration also the symptoms have been abolished or materially relieved, and the improvement has been maintained for two or three years. On the other hand, two of the patients who recovered from the operation enjoyed their relief from certain symptoms but a short time, namely two and a half months and one month respectively (Nos. V and VI). The latter case was unsuitable for operation, as shown by the *post-mortem* examination, but not shown by diagnostic considerations beforehand.

Pathology.—The tumours, it will be seen, have been adenomata, carcinomata, sarcomata, or cysts. In Case VII there was no tumour. The duration of life and health after operation in some of the cases of sarcoma and carcinoma (see Cases IX, X and XIII) has been very remarkable, and it is remarkable, again, to find that in Cases II and VIII the patients were found to have malignant tumours, and yet they had been suffering from acromegaly eight or nine years. This long history suggests that the tumours had been of strangely slow growth (v. Eiselsberg).

Technique of the Operation.—The sphenoidal region has been reached through the upper part of the nasal cavities, with or without opening the frontal sinuses, or through the lower part of the nose by the method of Kanavel.[1] The sphenoidal sinus is opened, and through it the sella turcica, and the tumour excised with sharp spoons or other suitable instruments. The last-named method, that of Kanavel, seems the most promising. Von Eiselsberg, though he himself operated by deflecting the nose to one side and opening up the frontal sinuses, remarks[6] that having seen Cushing operate with technique similar to that of Kanavel, he is so favourably impressed that he has decided to give it a trial, though he thinks that temporary resection of the frontal sinuses walls, " giving, as it does, a larger access to the field of operation, must in certain cases be of decided advantage." The Kanavel technique is briefly outlined in Case XII (see table). As a prophylactic against meningitis from the operation Cushing[2] recommends the administration of urotropine beforehand. This recommendation is based upon S. J. Crowe's discovery that formaldehyde is rapidly excreted in the cerebro-spinal fluid.

J. Lacy Firth.

[1] *J. Am. M. Ass.*, 1909, liii, 1704.
[2] *Op. cit.*

TABLE I. EIGHT CASES OF HYPOPHYSECTOMY FOR ACROMEGALY (HYPERPITUITARISM).

No. of Case.	Surgeon.	Date of Operation.	Age and Sex.	Duration of Symptoms.	Leading General Symptoms.	Ocular Symptoms.	Result of Radiography.	Pathology, etc.	Technique.	Results.
i.	Schloffer	March, 1907	..	..	..	..	..	..	..	R. Lived 2½ months.
ii.	Von Eiselsberg (*Ann. Surg.*, 1910, ii, 1)	Dec., 1907	F. 33	8 years	Acromegaly, severe headache	Bi-temporal hemianopsia	..	Basal sarcoma, extending to frontal lobes of brain	Lateral deflection of nose and removal of anterior wall of frontal sinuses	D. From meningitis 48 hours after operation.
iii.	Hochenegg .. (Case i.) (*Deutsche Ztschr. f. Chir.*, 1909, c. 317)	Feb., 1908	..	..	Acromegaly	..	..	Tumour localised in the sella	Through upper part of nose and frontal sinus	C. Complete cure. Seen 2 years later.
iv.	Hochenegg .. (Case ii.)	..	..	..	..	..	..	..	..	R.
v.	Hochenegg .. (Case iii.) (*Op. cit.*)	Feb., 1909	F. 33	3 years	Acromegaly, severe headaches, amenorrhœa	Right eye, narrowed field. Left eye, atrophy of left half of papilla and temporal hemianopsia	Enlarged sella	Malignant tumour of hypophysis, involving frontal lobes	Through upper part of nose, with deflection upwards of osteoplastic frontal flap	D. Death within 24 hours. Autopsy showed status lymphaticus, hydrocephalus internus, degeneration of myocardium, liver and kidneys.

TABLE I (*continued*).

No. of Case	Surgeon.	Date of Operation.	Age and Sex.	Duration of Symptoms.	Leading General Symptoms.	Ocular Symptoms.	Result of Radiography.	Pathology, etc.	Technique.	Results.
vi.	Kocher .. .. (*Deutsche Ztschr. f. Chir.*, 1909, c. 13)	Jan., 1909	F. 30	2 years	Acromegaly, headache, amenorrhœa	Choked discs, hemianopsia, central scotoma left side	Enlarged sella	Round-celled sarcoma invading the cavernous sinus and base of skull	Temporary splitting of upper part of nose in middle line, and osteoplastic deflection of flaps to each side. Frontal sinuses not opened	R. Abatement of all symptoms for a month, then rather sudden death from increased intracranial pressure.
vii.	Harvey Cushing (*Ann. Surg.*, 1909, l. 1,002)	March, 1909	M. 38	7 or 8 years	Acromegaly, headache	Photophobia, normal fields of vision	Slight enlargement of sella	No tumour. Glandular tissue showed signs of excessive activity	Frontal sinus walls and nasal bones turned down in osteo-plastic flap. Ethmoid cells removed	R. Ten weeks later headache absent, acromegalic appearance of face improved.
viii.	Von Eiselsberg (*Op. cit.*)	March, 1910	F. 40	9 years	Acromegaly, headache, insomnia	Normal fields..	Enormous sella	Tumour pronounced to be parietal sarcoma by Stoerck, carcinoma of hypophysis by Erdheim	Osteo-plastic deflection of nose to right, frontal sinuses opened	D. Death from suppurative meningitis after three days.

TABLE II. CASES OF HYPOPHYSECTOMY FOR ADIPOSO-GENITAL DEGENERATION (HYPOPITUITARISM).

No. of Case.	Surgeon.	Date of Operation.	Age and Sex.	Duration of Symptoms.	Leading General Symptoms.	Ocular Symptoms.	Result of Radiography.	Pathology, etc.	Technique.	Results.
ix.	Von Eiselsberg (*Op. cit.*)	June, 1907	M. 20	About 7 years	Infantilism, headache	Right eye, atrophy of temporal half of papilla. Left eye, "genuine atrophy"	Enlargement of sella	Infiltrating growth of epithelial character, with cyst (pre-cancerous, Stoerck)	As in Cases ii and viii	R. Two years and nine months later adiposity decreased, vision much better, hair growing on scrotum.
x.	Von Eiselsberg (*Op. cit.*)	Dec., 1907	M. 27	3 years	Fatness, headache, loss of sexual power	Bi-temporal hemianopsia	Large excavation in position of sella	Angio-sarcoma of hypophysis	As in cases ii, viii and ix	R. Two years and three months later patient "doing well," vision much better.
xi.	Von Eiselsberg (*Op. cit.*)	Dec., 1908	F. 18	2 years	Vomiting, headache, fatness, infantilism	Right eye, vision one-third. Left eye, could only distinguish fingers. Bi-temporal hemianopsia	Absence of great part of sella	Cyst containing two teaspoonfuls of chocolate-brown fluid. No evidence of malignancy	As in Cases ii, viii, ix, etc.	C. The patient had meningitis after a week, but recovered. Two years later patient absolutely normal except for temporal hemianopsia in left side. Vision much improved.

TABLE II (*continued*).

No. of Case.	Surgeon.	Date of Operation.	Age and Sex.	Duration of Symptoms.	Leading General Symptoms.	Ocular Symptoms.	Result of Radiography.	Pathology, etc.	Technique.	Results.
xii.	S. J. Mixter and A. Quackenboss (*Ann. Surg.*, 1910, lii, 15)	Dec., 1909	M. 27	About 5 years	Infantilism	Bi-temporal hemianopsia, optic atrophy	Enlargement of sella	An ounce and a half of cholesterine-laden fluid escaped from a cyst	Method of Kanaval, viz. U-shaped incision beneath nose, nose turned up, bony-septum removed submucously, turbinates held back by retractors.	R. Four months later patient was "feeling fine." Vision much improved, temporal hemianopsia still present.

TABLE III. HYPOPHYSECTOMY FOR CASES OF MIXED OR DOUBTFUL TYPE.

xiii.	Von Eiselsberg (*Op. cit.*)	Jan., 1909	M. 36	About a year	Intense headache, impotency	"Choked disc" in both eyes, temporal hemianopsia right side	Enlargement of sella	Large tumour of hypophysis, epithelial carcinoma.	As in Cases ii, etc.	R. Left eye remained blind. Fatness diminished, feet and hands became smaller. Head-circumference diminished. Signs of returning sexual power. Seen one year and three months later.
xiv.	F. Smoler .. .. (*Wien. klin. Wchnschr.*, 1909, xxii, 1,488)	..	..	..	..	..	Enlargement of sella	Cherry-sized tumour of hypophysis (adenoma) metastasis in cerebellum	Nasal route.	D. Death from aspiration pneumonia in 60 hours.

DERMATOLOGY.

Organotherapy in sclerodermia forms the subject of a comprehensive paper by Roques,[1] in which he has collected a large number of published cases treated by the administration of animal organs or their extracts. He premises that the multiplicity of remedies in vogue for sclerodermia is due to their inefficacy, but organotherapy appears to mark an advance provided the recent theories are correct that the disease depends on alterations of the vascular glands (pituitary, suprarenal and especially thyroid).

Thyroid treatment is based on the frequency with which abnormalities of the thyroid gland—hypertrophy, atrophy, Graves's disease or myxœdema—have been observed to co-exist with sclerodermia.

Roques gives a tabular summary of sixty-seven cases of diffuse sclerodermia (in some of which the thyroid is stated to have been altered) where thyroid extract was administered with the following results :—

Cases cured	4 or	5.97 per cent.
,, improved	32 or	47.76 per cent.
,, not improved ..	31 or	46.18 per cent.

Percentage of favourable results, 67.73.

A few instances of circumscribed sclerodermia treated with thyroid extract have been collected : out of ten cases one was cured and six improved. The relation between **suprarenal** disease and sclerodermia is based on very slender evidence, but at three necropsies the suprarenals have been described as diseased. Three cases are quoted with definite improvement after administration of suprarenal extracts, while in a fourth case under Roques's observation there was slight amelioration.

The **pituitary body** has been accused of being at fault in a few cases of sclerodermia, but therapeutically it has proved inert.

Defects of the **genital organs** or functions associated with sclerodermia have led to the administration of testicular extract in two cases without benefit, and ovarian extract has proved equally useless. Mesenteric gland extracts (based on a theory of gastro-intestinal auto-toxæmia) has been administered by Schwerdt, and his results (quoted by Roques) were distinctly favourable in five cases.

Finally, **polyglandular combinations** have been employed in treatment. Renon has seen a case of sclerodermia lose its induration after several weeks of thyro-ovarian treatment. On the other hand, combined pituitary and thyroid extract yielded no favourable results to different observers. On the whole Roques is of the opinion that organotherapy has given more encouraging results than other remedies, and that not only

[1] *Ann. de Derm. et Syph.*, 1910, vii, 383.

thyroid but a trial of other glandular extracts separately or combined should be essayed, bearing in mind that it is only in the early stages that a cure can be reasonably expected, "atrophy of the skin cannot yield to any remedy."

The congestive action of potassium iodide on tuberculosis of the skin is discussed by Audry.[1] This congestive action has long been recognised in pulmonary tuberculosis. Audry has observed that the administration of four to six grammes of potassium iodide daily is followed after two or four days by very definite local congestive phenomena in lupus vulgaris, tuberculous ulceration, Darier's keratosis follicularis and lupus erythematosis. The congestion disappears on discontinuing the drug. The author has not found that this action exercises any ill effects on the disease, but rather the reverse. He is content, however, to record the fact without expressing a definite opinion as to its value. He admits that potassium iodide plays the part of accelerator in a number of epithelial neoplasms, and is manifestly harmful in leprosy, but in these cases it does not produce the rapid congestion seen in tuberculides. The reaction in tuberculosis is much more transient, slight and inconstant than that provoked at times round syphilides at the outset of mercurial treatment. In some subjects it may almost be compared to a tubercular reaction of moderate intensity.

Experimental production of pigment in vitiligo. Audry[2] summarises the observations of Stein[3] thus, "The pigment can be restored in vitiligo either by chemical radiations (Buschke's researches with the Kromayer lamp) or with thermal agents (carbon dioxide snow). The pigment thus formed appears in disseminated spots after a variable incubation period. It is intra- and extra-cellular, and resembles the normal pigment. It does not give any iron reaction, it is acid, soluble in hydrogen peroxide, is stained green by polychrome blue, and responds to the reaction for melanin."

J. A. NIXON.

Reviews of Books.

Severest Anæmias: their Infective Nature, Diagnosis and Treatment. By WILLIAM HUNTER, M.D. Vol. I. Pp. xv, 226. London: Macmillan & Co. 1909.

Hæmatologists have evolved a remarkable terminology for their particular branch of medical science; it tends to confuse the average reader. Whether the bold stand taken by the writer

[1] *Ibid.*, p. 405. [2] *Ibid.*, p. 415.
[3] *Arch. f. Derm. u. Syph.*, 1909, xcvii, 163.

of *Severest Anæmias* will effect any simplification in the descriptions of blood changes remains to be seen, but it will go a long way towards convincing the general worker that the many differentiations of the cellular elements of the blood lead to no tangible end. When an observer like Hunter clears away the mists surrounding the earlier conceptions of "pernicious anæmia," tells how the accurate descriptions of the first English writers on the disease were made less clear by subsequent writers, and replaces the hypothesis of degradation of blood cells to embryonic types by attributing these changes to an infectious origin, we feel that at last the way opens for clearer thought. Rightly or wrongly, this conception has gained considerable hold already, and there are many who unhesitatingly side with Hunter in regarding degeneration and atrophic changes in the mucous membrane of the tongue, stomach and intestines as the all-sufficient factor in the ætiology of severe anæmia. The dietetic and medicinal treatment of the alimentary tract in many cases tends to the cure and arrest of the disease, and the consequent disappearance or diminution of the anæmia.

Perhaps, however, the matter is not such a simple one. While it must be admitted that infections of an alimentary origin may play a part in the production of anæmia, we are not warranted in ascribing all severe anæmias to this cause.

Nevertheless this work of Dr. Hunter is exceedingly valuable. It tends to the restoration of clinical observation, and points away from the absolute necessity of laboratory diagnosis in severe anæmia. Much of it has appeared before in medical periodicals, much of it is a review of the papers on pernicious anæmia published during the last forty years, but it is valuable to have all the information within the pages of one volume, and we therefore recommend the purchase of this book to those who are interested in the subject.

Common Disorders and Diseases of Childhood. By GEORGE FREDERIC STILL, M.A., M.D. Pp. xii, 731. London: Oxford Medical Publications. 1909.

To apply the quotation from Tupper with which Dr. Still begins his book, there is much of the "clear-running wine of conviction," with but little of the "scum and lees of speculation," and the convictions expressed here are so definitely based upon facts observed as to be in their turn convincing. Dr. Still has brought to the study of pædiatrics an industry and enthusiasm which would have carried him far into the field of research even if no other qualities were added; but that which has made the explorations fruitful to the whole profession is his remarkable discernment, by which he has been enabled to reject the chaff and hold fast to the grain. This being so, it is enough to say of this book that it is a faithful expression of the author's own qualities.

It is not a systematic study of the subject, nevertheless there is not much relating to disease in children which is not alluded to in the book. In some chapters there is, perhaps, an excess of detail, for instance, in those relating to the diet of infants; but this is the inevitable outcome of Dr. Still's propensity for the registration of facts.

In many ways the book is similar to Dr. John Thomson's volume on the same subject; both are essentially clinical, in both there is a careful sifting of data, and in both the great bulk of the observations recorded have been made by the authors themselves. Some of Dr. Still's chapters are complete studies of a subject, for example, congenital syphilis; in others the sick child is described with reference to some particular symptom, as in the chapters on fever of obscure causation. These latter chapters have a peculiar freshness and charm for the jaded consumer of stereotyped text-books, and on every count the book is one to delight medical practitioners and advanced students alike. It is good to realise (in days in which depreciation of everything British is a fashionable pursuit) how much we are indebted to Great Ormond Street, to Sturges, Cheadle, Barlow, Lees, Hadden, as well as to Dr. Still and his colleagues, for our knowledge of the disorders of childhood.

The book is well bound and printed. There are a number of good pictures, and an admirable index.

A System of Operative Surgery. By Various Authors. Edited by F. F. BURGHARD, M.S., F.R.C.S. Vol. IV. Pp. xxvi, 687. London: Oxford Medical Publications. 1909.

This last volume of the very handsome and exhaustive treatises on surgical operations deals chiefly with the various special regions. Mr. Bland-Sutton writes eleven chapters on abdominal gynæcology, and gives a great deal of interesting information with regard to pathology, with the clear illustrations which always accompany his writings. Operative methods are relegated to a quite secondary position, as may be judged from the fact that whilst seven pages are devoted to discussing the relations of pregnancy and uterine tumours, less than one page without a single picture is considered sufficient for the description of Wertheim's operation. Dr. Phillips deals with vaginal gynæcological conditions, but there is nothing specially new or original in his article.

The section on ophthalmic surgery, by M. S. Mayou, occupying 125 pages, very fairly represents the practice adopted by English surgeons. When restricted to so limited a space many details have necessarily to be omitted, and the author has acted wisely in leaving out reference to other writers and in reducing to as few lines as possible any criticism of the special advantages and

applicability of the operations described. We think, however, that he might have entered rather more into detail in some practical points. Very little is said about the proper application of cocaine, and the duties of the assistant are not clearly defined. In the extraction of cataract an iridectomy is recommended, and capsule forceps are preferred to the cystotome. A much more definite description of the needles and sutures required in advancement operations for strabismus is needed. "Three strong silk sutures" and "four sharp needles" gives no idea whatever to the uninitiated as to what to provide, and the text does not make it very clear what is done with the fourth needle. It is a great advantage to use black silk sutures. Tenotomy of the opposing muscle is advocated in all cases. This no doubt is usually necessary, but there are decided advantages in postponing the tenotomy until the three sutures have been inserted in their places.

In the description of Hess's operation for ptosis the sutures are directed to be passed from the intermarginal line (between the lashes and the border of the conjunctiva) instead of through the skin of the lid at a point some five millimetres above the lashes. This departure from the original description of the operation may be a decided advantage. In describing Motais' operation, no mention is made of the "anchor sutures" fastened above to strapping on the forehead, by means of which the lower lid is raised, and risk of ulceration of the cornea from exposure is to a great extent obviated. Too pessimistic a view, we think, is taken of scleral puncture in detachment of the retina. Deutschmann's and other modifications of scleral puncture are so safe that they are well worth a trial, as extremely good results have been obtained in a few cases.

The descriptions of the operations are very clear and easy to understand. The illustrations are for the most part admirable. Those relating to iridectomy are particularly good, and where necessary pathological details are shown in excellent photo micrographs.

The article on ear operations is by Mr. Hunter Tod, and is a model of clear description, exposition of up-to-date methods, and beautiful illustrations. Mr. Douglas Harmer gives a most complete account of throat surgery, including a description and discussion of bronchoscopy and tracheoscopy. Dr. St. Clair Thomson concludes the volume with the section on nasal operations, those portions dealing with the accessory sinuses being specially good and well illustrated.

The Pathology of the Eye. By J. HERBERT PARSONS, D.Sc., F.R.C.S. 4 Vols. London: Hodder and Stoughton. 1904–1909.

This work, in four large volumes, is profusely illustrated, and is so well arranged that, despite its size, any student can find

readily within its pages an account of whatever pathological conditions of the tissues of the eye he desires to study. For the ophthalmic surgeon the book will be found a complete reference to any affection of the eye. The author writes upon each disease and on every variety of it in an easy style, and with a completeness that gives the reader pleasure and satisfaction. It is difficult to speak too highly of the value of the work in its entirety; it reflects the greatest credit on the author. It is a most valuable and almost essential addition to any public medical library, or to that of any ophthalmologist's (English or foreign), and it relieves the British school of ophthalmic surgeons from the criticism that good as they are in practical clinical work, little has been done by them, excepting in the case of a few well-recognised teachers, to advance the pathological knowledge of eye-diseases.

Parsons's book is perhaps the best on eye diseases and their pathology that has been written in any language. Two volumes are devoted to the histology of the various structures of the lids and eyeballs; two others to the general pathology of the various diseases that affect those structures. There is a quite exhaustive list of all the papers bearing on the subject that have been published in the European and American scientific journals. No subject in clinical ophthalmology is unnoticed; every branch receives due attention.

The illustrations are drawn from actual diseased conditions of the eyes and their appendages, or direct from microscopic slides of the pathological conditions alluded to.

The author's text and comments are practically enough to give a wide acquaintance with any and every diseased condition, but to render further investigation easy the most important papers under each heading are "starred," so that the monographs most deserving of attention can be readily distinguished from others, which, however, in their turn are of great value in helping to criticise or support the views which are more generally accepted.

The complete collection of material, its masterly arrangement, and the capable digest given by the author from his own knowledge, as a result of the study of the literature, entitle the book to a high rank among medical publications. Those who have done the most expert work in the various subjects will be the first to admit how fair and judicial the author's views are on the special subjects which may be under discussion, while the width of his scientific training and his exceptional opportunities for the microscopic examination of diseased eyelids give increased value to the opinions expressed by him.

Even those who are not primarily interested in eye diseases may with advantage look through the pages of these volumes; they could well be taken as a type upon which a compendium of the work done in other specialities might be based.

We much regret the delay in noticing this valuable work of Dr. Parsons, which contains as complete an account of diseases of the eye from the standpoint of pathology as is possible at the present time.

Urgent Surgery. By FÉLIX LEJARS. Translated from the Sixth French Edition by W. S. DICKIE, F.R.C.S. Vol. I. Pp. xiv, 617. Bristol: John Wright & Sons Ltd. 1909.

The translator and publishers of this work are to be congratulated on its material and artistic excellence, and its production is an honour to its author and an ornament to European surgery. There are few authors who can say of a book, "I have lived it before writing it," and the text bears evidence, in its easy, demonstrative style, and in its judicious selection of facts and illustrations, that the author lives what he writes. With the collaboration of artists of the French school, who have produced some of the finest line drawings we have ever seen in surgical literature, and with the addition of some 200 photographs, M. Lejars has produced a monumental surgical volume of an admirable character. We cordially commend the work to our surgical friends, and look forward to the appearance of the next volume.

Immunity and Specific Therapy. By W. D'ESTE EMERY, M.D., B.Sc. Pp. xiv, 448. London: H. K. Lewis. 1909.

There was a need for this book, and Dr. Emery has met the requirements of the physician, surgeon and student in a manner demanding an expression of satisfaction and praise. Unlike that admirable volume on a similar subject recently issued by Professor Muir as a record of the sterling research work of the Glasgow School of Pathology, this book is written down to the limits of the general reader. Perhaps the best evidence of this fact is to be found in an admirable glossary which *precedes* the general text. This, at all events, allows the reader to spend a few hours of wonderment in the fairyland of bacteriological and serological terminology. A concise and explicit account of the history and general aspects of immunity is followed by chapters on the nature and interactions of toxins, the side-chain theory, bacteriolysins, agglutins, precipitins, phagocytosis, colloidal theories of antibodies, and the practical applications of immunity problems.

Much of what is written is now old, and the next edition will need considerable alteration, but it would be churlish to point out trivial defects, or dissent from the attitude of Dr. Emery on some contentious points. We express unreservedly our gratitude to Dr. Emery for the time and labour he has spent in compressing the subject within a few pages, and we hope that his efforts may meet with the success they deserve.

Diseases of the Colon. By P. LOCKHART MUMMERY, M.B., B.C., F.R.C.S. Pp. vi, 322. Bristol: John Wright & Sons Ltd. 1910.

This very excellent little book is written by one who for many years past has devoted special attention to that branch of surgery which deals with diseases of the colon and rectum. It presents the subject in a very lucid fashion, and there are enough clear case reports to make the descriptive matter vivid without overburdening it with detail. It will serve rather as a source of reference for general practitioners than as an exhaustive monograph. The chapters on colitis, and the description of the use of the sigmoidoscope are the most valuable in the book, and it is noteworthy that the author attaches a very high importance to the operation of appendicostomy, whereas that of ileo-sigmoidostomy is kept much in the background. In the description and treatment of chronic constipation Mr. Mummery adheres to safe conservative principles, and says but little in favour of heroic measures.

The chapters on anatomy, physiology and malignant disease do not seem to be as complete as the importance of these subjects demands. When it is stated that the average length of the colon is twenty-two inches (page 2) we presume that the transverse portion only is referred to. The description of certain methods of treatment is not sufficiently detailed to be of any use (*e.g.* electrical treatment on page 103).

We think that the value of the book would be greatly increased if a larger reference were made to the very considerable continental literature on the subject, and also if a more complete list of authorities and papers was added to each chapter.

Estimation of the Renal Function in Urinary Surgery. By J. W. THOMSON WALKER, M.B., C.M. (Edin.), F.R.C.S. Pp. xiv, 274. London: Cassell and Company, Limited. 1908.

The importance of discovering the degree of functional capacity possessed by the kidneys before operating upon any part of the urinary system is now well recognised. But it is doubtful if the general surgeons in this country even yet sufficiently use the best methods available for estimating renal adequacy. It is true that none of the available methods of investigation are perfect, but some of them are accurate enough and simple enough to merit routine application, and we welcome the appearance of the book before us, which will serve both as a stimulus and as a guide to the practice of such methods.

The work is in two parts. The first dealing with the estimation of the total renal function, and the second with the estimation of the functional capacity of each kidney separately.

In the earlier pages the symptoms and signs of renal inadequacy, many of which may easily be overlooked, are helpfully described. Then follows a description and critical survey of the methods, among others, of estimating renal function by cryoscopy of the blood and urine, by the elimination of methylene-blue and indigo-carmine, and by the excretion of sugar after injection of phloridzin.

In the second part the uses and technique of ureteric meatoscopy, of catheterisation of the ureters, and of intra-vesical separation of the urine from each kidney are fully described.

We are pleased to find that the author believes that the dangers alleged by some writers to attend catheterisation of the ureters are minimal if due care is exercised in carrying out the necessary manipulations, and that this, the most reliable of all methods for obtaining the urine from each kidney separately, without intermixture and without vesical contamination, is confidently recommended. We may state, without fear of contradiction by those who have seriously tried the method, that it is not difficult to accomplish in most cases, granted that the orifices of the ureters can be clearly brought into the field of vision.

The labour involved in carrying out many of the detailed investigations recorded in the pages of this work must have been great, and we note that the author recognises his indebtedness for much assistance to an " enthusiastic staff of house surgeons and nurses." We hope that those who endeavour to follow in the author's footsteps will meet with similar enthusiastic assistance ; but it is safe to say they will not do so unless they are enthusiastic themselves, and perhaps not even then. We consider that both personal and extra-personal enthusiasm will be required to follow out the excellent instructions given in the section on the practical application of the methods of investigating the functional capacity of each kidney. The instructions are to administer a diuretic and inject phloridzin, to catheterise the ureters, and to collect the urine from each kidney every quarter of an hour or every half hour for two or three hours, and to estimate the actual quantity and the percentage of the urea and sugar in each sample, and construct a chart showing the course of elimination of these substances.

We have nothing but praise for this book, as we consider it to be of conspicuous merit, and one which has filled a gap in English medical literature.

The Operations of Aural Surgery. By C. ERNEST WEST, F.R.C.S., and SYDNEY R. SCOTT, M.S., F.R.C.S. Pp. xii, 201. London : H. K. Lewis. 1909.

The operations described in this book are not only the ordinary ones on the meatus, tympanic membrane, ossicles,

mastoid process, and those for intracranial abscess and sinus thrombosis, but also the operations upon the labyrinth, named by the authors inferior, superior and double vestibulotomy, and the operations of translabyrinthine, postlabyrinthine and lumbar drainage for meningitis, and lastly, a systematised operation for the removal of early malignant disease of the external auditory meatus and middle ear. No operation or technique is described which the authors have not themselves tested and found of value.

All the descriptions of operations are characterised by completeness of detail with respect to technique, indications, preparation, and after treatment. For this reason the book is a most excellent one for dressers, house surgeons and assistants beginning work in an aural clinic. But the book will also appeal strongly to the specialist by reason of the account given therein of the authors' experiences of the more modern operations mentioned above, which operations the writers have been so instrumental in elaborating and bringing before the profession in various publications.

Vetera et Nova. By THOMAS LOGAN, M.D. Three Volumes. London: H. K. Lewis. 1910.

There is a certain pathos attaching to this collection of studies and essays, which the author had long been preparing for the press. His fatal illness left the actual publication in other hands, though no alterations or excisions have been made by the editors. So the three volumes are presented to us by Dr. Logan's friends as a memorial and a tribute, thereby perhaps avoiding any very searching criticism.

The essays represent the excogitations of a busy practitioner and public health officer with a taste for fine confused feeding in literature, and a love of travel which he was fortunately able to gratify freely; also he was a Scotsman from Burns' own Ayrshire, with the gift of expressive speech. His fertile brain and pen combined to furnish throughout a long life a running commentary on the progress of biological, physical and metaphysical science, but every essay and every page is deeply imbued with the personal metaphysic of the author.

The chronicling of scientific facts has not been supremely well effected; as a contribution to physical or metaphysical science it must be admitted to be valueless, but as a human document, as an exposition of the response of a single individual brain to a series of impressions garnered in from a vast field, it holds our attention.

These essays and studies may not, in fact, advance our knowledge or understanding of any of the subjects with which they deal, but they serve well to illustrate some results of unharnessed cerebration.

Diseases of the Nervous System. By H. CAMPBELL THOMSON, M.D., F.R.C.P. Pp. xv, 480. London: Cassell & Company, Limited. 1908.—This book is one in which the main phenomena of nervous diseases are gathered into a relatively small compass, the different diseases being clearly but shortly described. It is one which should be very useful to the student, for it is well illustrated, both with photographs, which show the different deformities met with in neurology, and with many excellent diagrams and several coloured plates. If only for the illustrations, the book is one which should form a very useful addition to the usual text-book.

Medical Inspection of School Children in Bristol. Bristol. 1909.—We turn with interest to the Second Annual Report of the School Medical Officer to the Bristol Education Committee, because it gives for the first time an account of a full year of medical inspection of school children in Bristol. The report has been drawn up by Dr. T. A. Green, who is to be congratulated upon having compressed into a small space the data that are of interest and significance, without making his pages dull. A proper use of the available figures is very necessary, and a perusal of this report shows that the medical inspection of school children is destined to be of national value, not merely by reason of its direct effect in the early detection of disease, but also in that it will in time provide a suitably large stock of data for various statistical inquiries. For example, we are given a number of interesting tables of average heights and weights at different ages, from which it appears that Bristol children are a little shorter and a good deal lighter than average British children of corresponding ages, and that the older children are of better physique if they have been brought up in one of the less densely populated areas of the city than those who have enjoyed less favourable conditions. A beginning has also been made with the question of the relation of a high infant mortality to the physique of the survivors: this is, of course, not to be settled by one year's observations, so that for conclusions we must wait till the inquiry which is opened by this report has covered a longer period. Turning to the nature of the various physical defects discovered by medical examination, we find that out of 15,161 children examined 271 had to be excluded from school either permanently or for varying periods on account of divers diseases. The principal items in this category were non-tuberculous pulmonary affections, pulmonary tuberculosis, scabies, impetigo, chorea, epilepsy, enlarged tonsils and adenoids. Defects of some kind were noted in 7,249 children, or nearly half of those examined. In 1,691 instances parents were advised of the need for medical treatment which did not involve absence from school. Of these, 698 were cases of enlarged tonsils and adenoids, or of adenoids only. These figures do not include certain defects

and disorders. Vermin of the scalp, for example, were notified in 72 boys and 2,208 girls: in the extermination of these pests the medical inspectors received much valuable help from the two school nurses, whose whole time was devoted to visiting children in their homes, and helping to carry out such treatment as was needful. Of 8,379 children whose vision was tested, 856 were found defective in this respect; the local education authorities have made arrangements for the supply of cheap spectacles to scholars who need them. Definite mental defect was noted in 43 cases, actual imbecility in 5, and 426 were found to be "dull." One or more decayed teeth were noted in nearly two-thirds of 11,597 children examined for this purpose. In about half of these cases dental treatment was recommended. Infectious disease must have been responsible for very many absences from school: there were 729 cases of scarlet fever and diphtheria among school children in the year, and we are interested to see that no less than 2,050 cases of non-notifiable infectious disease (including 1,126 of measles) were notified by head teachers to the medical officer of health. It is a little disappointing to find that parents are not more alive to the advantages which their children enjoy from systematic inspection. Only 57 per cent. of the children examined were accompanied by parents, but it is interesting to note that the district in which parents attended best is the poorest in the city. It is definitely known that no action was taken by the parents in about one-third of the cases of general disease in children fit to attend school, in about half the cases of eye defect, and in nearly two-thirds of the cases of dental defect in which treatment was recommended. Such apathy is extraordinary and lamentable, but it is to be hoped that as the value of inspection is demonstrated by series of concrete instances the parents will awake to the fact that they are getting a great deal for nothing, and that they are wasting precious opportunities. In conclusion, attention must be drawn to the interesting notes at the end of the report by the medical officers to special schools, Dr. L. M. Griffiths and Dr. J. S. Griffiths. The whole report is full of interest, and it is clear that the school medical officers are working with an enthusiasm which cannot fail to tell favourably on the health of the community in the long run.

The Medical Annual. Twenty-eighth year. Bristol: John Wright & Sons, Ltd. 1910.—The new work of the year has been in this volume described by thirty-two contributors, three of whom are American. The editor asks, "Have we, in sea water, a plasma which will supply the protoplasmic cells with something the lack of which causes certain chronic diseases? How far will the 'hormones' carry us in the cure of some diseases when drugs have failed? Will the bacterial vaccines enable us to check the invasion of the bacilli? These are questions of the immediate future, and we have done our best to place existing

knowledge before our readers." We notice that bacterial vaccines, sea water and internal secretions have not quite displaced drugs from the position they have previously occupied; there are still seventy-nine pages of therapeutic progress, but it is gratifying to learn that the output of new drugs is falling off, for otherwise the new drugs would exceed the number of patients on whom they have to be tried. The advances in surgical technique and accurate diagnosis occupy much space, and the subjects of typhoid fever, cancer and syphilis have received full attention. The plates showing the various urinary deposits are no better than those which were found in the text-books of fifty years ago, and we fail to see on what ground the editors accepted the suggestion of a correspondent who should have been sufficiently familiar with these deposits. An immense amount of useful information is bound up in the volume, which continues to be well up to the latest views of things, and must be really indispensable to the busy practitioner who can only read a limited amount of current medical literature. It should be on the study table for constant reference, and will be found a reliable and suggestive friend in emergencies. We are glad to see that stereoscopic plates are not out of date; a picture which is not stereoscopic is scarcely worthy of inspection.

Transactions of the Thirty-third Annual Meeting of the American Dermatological Association, 1909.—Though we have come to expect that matters of interest will be dealt with at the Annual Meeting of the American Dermatological Association, the *Transactions* for 1909 are unusually rich in matters of recent advance in dermatology. Much use has been made by various observers of the Wassermann reaction in syphilis, and of Noguchi's modification of this test. Though it may take long before implicit reliance can be laid upon tests of this nature, the compiling of facts by competent pathologists can only prove of service. Thus when Whitehouse draws attention to five out of seven cases of scleroderma which were positive to Wassermann's test, he may or may not be throwing light upon the pathology of the complaint, but he certainly awakens interest in a possible connection between some forms of this disease and syphilis. Psoriasis is dealt with in three interesting papers by Pollitzer, Schamberg and Breakey, while Fordyce treats of the pathology and histological appearances of the Lichen group of skin diseases. An interesting paper by White records his observation on the elastic tissue of the skin. The *Transactions* are concluded by the usual interesting summary of the dermatological returns from the various clinics, which comprise some 36,500 cases.

Catalogue of the Pathological Museum of the University of Manchester. By J. LORRAIN SMITH, M.A., M.Sc., M.D., F.R.S. Manchester: At the University Press.—This admirably arranged

catalogue is a model of what a museum catalogue should be, and it would be a great advantage were every medical museum to issue a similar publication. The reviewer has found it very useful when searching for examples of rare lesions, and it ought to find a place on the bookshelf of every department of morbid anatomy. The Council of the University of Manchester have set a valuable precedent in making their collection of pathological specimens widely available, and it is to be hoped that other Councils may be equally generous. To Professor Lorrain Smith and his collaborators we offer our unstinted praise and thanks. The energy and time consumed in the preparation of the volume must have been enormous. Medical literature is much enhanced by such a sterling contribution as this.

Male Diseases in General Practice. By EDRED M. CORNER, M.A., M.C. Pp. xvi, 462. London: Oxford Medical Publications. 1910.—This is an excellent book, and deserves the attention of the student and general practitioner. It records many valuable observations and statistics obtained by the author and others from a vast number of cases. The chapters dealing with hydrocele and the imperfectly descended testicle are particularly good in the many practical points and original suggestions that are presented. Torsion of the testicle is dealt with in a more thorough and complete manner, as the result of modern observations, than is commonly found in many current text-books. Of particular interest is the work done by the author on the cremasteric reflex and its value as an indication of general and local conditions of disease. Without hesitation, one can recommend the book as a whole.

Lectures on Surgical Nursing. By E. STANMORE BISHOP, F.R.C.S. Pp. 143. Bristol: John Wright & Sons, Ltd. 1909. —This book accomplishes its object, the aim of which is to supply the surgical nurse with the reasons for the modern methods of treatment in surgical cases, in order to enable her to co-operate intelligently with the surgeon; instructing her in the many details of nursing that are essential to success, and setting forth in an orderly and readable manner her duties before, during and after operation.

How to Cut the Drug Bill. A. HERBERT HART, M.D. London: Bale, Sons and Danielsson. 1910.—To the dispensing practitioner this booklet should appeal strongly, as the author claims to have reduced his drug bill by 50 per cent. in acting on the methods laid down in the first edition. He proposes to bring out an annual edition of his work.

Editorial Notes.

British Medical Association.

THE seventy-eighth annual meeting, which coincided with the seventh birthday of the Representative Body, had many proofs before it of the success and vigour with which the Association is carried on under the present constitution. The attempt to obtain a Royal Charter, indeed, has been formally given up, but many of the objects sought for will be attained just as well by an amended Memoandum of Association under the Companies' Act. Meanwhile there is rapid growth both of the membership and of the work in various directions undertaken for the benefit of the general practitioner. The publication of the analyses of "Secret Remedies" has been a great success. The public has been widely interested and surprised by the revelations. 42,000 copies have been sold, and 20,000 more already ordered.

It was decided not to give a scanty Accident Insurance with the *Journal*, but a committee has arranged favourable terms for a really comprehensive one for members desiring it. A similar decision was given against spending money on a Central Research Laboratory, in view of the many existing laboratories, such as those of Dr. Mond's bequest, which are badly filled, but the Association continues to support and organise scientific research, and was able in particular to bring forward a most valuable report on the mininal dose of chloroform which is adequate without causing danger to life. Such burning questions as the dangers of School Athletics, the regulation of District Nursing Associations, ill-paid lectures on First Aid and Hygiene, and the prevention of Ophthalmia Neonatorum have been taken in hand, and carefully considered rules have been issued to check the evils complained of. Among many other subjects on which much work has been expended is the reform of death registration and of the coroner's jurisdiction. A deputation is now being sent to

the Lord Chancellor and the Home Secretary to press on them the views of the Association.

The most important matter which came up for discussion at the representative meeting was the question how to meet the coming Poor Law Reform and Government Insurance against Illness. The latter alone is to embrace 15,000,000 of wage-earners, perhaps the greatest revolution with which the profession has ever been faced.

Will this Association, which includes a majority of the medical men in the country, be able to make a united stand, and properly present our side of the case to Parliament? If individual voices crying alone for this or that, and totally unorganised, are to be heard, then it is perfectly certain that the needs and the just claims of the general practitioner will be put on one side. The general public will neither understand nor listen to the grievances of individuals, but an Association of 21,000 members can and will make its voice heard if well supported.

The Committee on Poor Law Reform has already drawn up an elaborate scheme, which has gone through a preliminary discussion by the Council and the Representative meeting, and will soon be sent to the divisions, with alternative plans and supplementary reports on the working of the German system, and possibly a report from an actuary. After the replies of the divisions have been digested a special Representative meeting, probably in February, will decide finally on the lines to be adopted. The Chancellor of the Exchequer has expressed his willingness to receive deputations, and the Friendly Societies are arranging to lay their case before him. Here then is a unique opportunity for every medical man in the country to join in moulding the proposals of a united profession, and to say to the Government: If you wish to purchase our services, these and these only are the conditions under which we can deal with you.

The scheme at present contemplates a central national provident medical service, organised and controlled by the Association, though without any financial liability. It will be a federation or union of local services, each controlled by (1) a

medical committee organised by the local branch of the Association, with representatives of non-members, and by (2) a mixed committee of laymen and medical men for matters referred to them. There will be a direct contract between each medical officer and his patient, or the person or body who pays for him, but the terms of the contract, such as the rate of fees, must first be agreed upon by the medical committee. The benefits of the service will be restricted to those within certain wage limits; contributions will be received from public bodies, employers and others. Any doctor will have the right to refuse a patient, and the patient will have his choice among all the doctors on the list. The payments will be put into a local fund from which the medical officers will be paid as may be agreed on, either at so much a head for each patient or in proportion to the attendance actually given. Some of us would favour a plan under which private practitioners would simply send in accounts at ordinary rates for attendance on Government beneficiaries.

The attractions of London itself are so great, and the special attractions provided for the annual meeting of 1910 in the Metropolis rendered it likely that as regards the number attending the records of previous years should be far exceeded. Everything appears to have been so well arranged that all the details worked themselves out with *éclat*, and the Metropolitan Counties Branch well deserves the congratulations of all who attended the most brilliantly successful meeting in the history of the Association.

At Westminster Abbey there was a large and varied array of colours due to the academic costumes of many Universities, a large number of the wearers of these robes being ladies. The sermon by the Very Rev. W. Page Roberts, Dean of Salisbury, was one which will not soon be forgotten by those who were present. The question, "Does it matter what a man believes?" was the subject of a powerful discourse, in which the doctrines of Nietsche were contrasted with the Christian faith, the preacher contending that the wild beast morality of Nietsche, if adopted, would not only supplant the morality of Christ, but would also supplant the medical man's mission of mercy.

The addresses of the President (Henry T. Butlin, D.C.L., LL.D), that on "Medicine," by Dr. J. Mitchell Bruce, LL.D., and that on "Surgery" by Gilbert Barling, F.R.C.S., were all worthy of an occasion when the respective speakers have the opportunity of a lifetime to say to a large concourse of their fellow practitioners what may be burning within them. It was, however, unfortunate that the lecturer on "Medicine" had to address his audience in a room which had little oxygen left, and in which at the commencement of the lecture there was only standing room at the top where nothing could be heard.

It was a fortunate occurrence that the Right Hon. Lord Ilkeston (Sir Walter Foster) was able to attend Mr. Butlin's dinner at the Hotel Cecil, to be congratulated on his elevation to the peerage, and that His Excellency the Earl of Aberdeen was present to do honour to the British Medical Association by attendance at the annual dinner. Those who attended the meeting at Montreal will not have forgotten all that was then done by Lord Aberdeen, in his capacity of Governor of the Dominion of Canada, when he attended all the public meetings, and spoke on many occasions words of welcome of the Association to Canada.

The various social entertainments were most enjoyable. The Guildhall reception was on the usual scale which characterises the hospitality of the Corporation of London; the guests were received by Sir John Knill and the Lady Mayoress in the historic hall, and many entertainments of an enjoyable character were provided. The garden party at Ranelagh on a fine afternoon, with its very interesting polo match, was much appreciated.

Various other meetings and the Saturday excursions have all been more or less described in the *British Medical Journal*, and need no further comment. We must, however, say a word about the medical museum, which is well described as "transcending all previous efforts in this direction." The museum committee had made a unique collection, drawn from all the medical schools and other museums and laboratories of London, and carefully arranged into various sections, each under the care of an expert honorary curator. An ocular demonstration of recent advances,

and of the methods employed both in the practice and in the laboratory for the diagnosis and treatment of disease, gave a marvellous revelation to most of the visitors of the great advances in tropical medicine, in parasitology and bacteriology which have been made in recent years. A collection of three hundred microscopes, lent by Messrs. E. Leitz, materially enhanced the utility of this exhibition.

The annual exhibition of foods, drugs, etc., was of the usual character, and contained much of novelty and interest.

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Conference on Tuberculosis, Edinburgh.

Much has been done by the National Association for the Prevention of Consumption and other forms of tuberculosis since its inauguration by the late King Edward VII some ten years ago. The mortality from tuberculosis has shown a great diminution, and more particularly so in consequence of the establishment of sanatoria in nearly all parts of the country. In our own district various local centres were formed, many meetings were held, and a branch of the Association was founded in each of the three adjoining counties of Gloucester, Somerset and Wilts. Funds were collected over the area of these counties, including the city of Bristol, and after soms delay it was decided to at once take proceedings for the establishment of a three counties sanatorium, which was to be located in a spot conveniently accessible from all parts of this area. The spot chosen was on the hills overlooking Limpley Stoke, above the Avon Valley, in the Parish of Winsley, and the sanatorium established there has become familiar to us under the name of the Winsley Sanatorium.

Founded in 1904, it has had five years of useful activity, and the fifth annual report for the year 1909 gives good evidence that it has become an indispensable part of the work of combating tuberculosis in this district. Having accomplished this much, the various local committees appear to have fallen asleep, and to have been content wtih what they had done. The President of the three counties branch was appointed President of the

Sanatorium Board of Management, and we were fortunate in having the cordial assistance of Lord Islington, formerly Sir John Dickson-Poynder, Bart., who having now become Governor of New Zealand, has of necessity resigned the office to which he was appointed at the foundation of the Sanatorium. The appointment of a successor will now rest with the Board of Management of the Sanatorium; but meanwhile the National Association is still alive, as is shown by the very successful annual meeting recently held in Edinburgh, on July 4th, under the presidency of Lord Balfour of Burleigh, Chairman of the Council.

The subject which attracted the greatest attention was the incidence of tuberculosis in childhood, when the views of Dr. Hamburger, of Vienna, were discussed, and threw some doubt on the value of the tuberculin test for diagnosis. The statement of Dr. Hamburger that "nearly all persons in the city of Vienna at the age of fourteen years were already tuberculous" appeared to be almost incredible, but the frequency of tuberculosis in children appears not yet to be fully appreciated. Dr. R. W. Philip believed that tuberculosis was essentially a disease begun in childhood; it was the tuberculosis of the child that made the tuberculosis of the adult in the great majority of cases. Hence the necessity for special provision for the children who are found to be tuberculous, and for the manifestation of care in this respect in the carrying out of the work of medical inspection of the school children. We trust that the National Association of Great Britain will continue its crusade in conjunction with the various similar organisations of other countries, and that their efforts will be as successful in the future as they have been during the past decade.

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Dr. John Brown.

THIS year marks the centenary of the birth of the author of *Rab and His Friends*. Dr. John Brown was born at Biggar, a small town in Lanarkshire, on September 22nd, 1810, the son of a distinguished Presbyterian divine. He practised medicine for nearly fifty years in Edinburgh, where

he and the dogs who shared his carriage on his rounds were well-known figures.

Although his practice was never very large, and as a scientist he did not attract popular applause, medicine owes to his memory a heavy debt; his contributions to the humanities of our profession still retain their force. He was one of a small group of doctors who, while continuing in active practice, have made their mark as men of letters. Our national literature has always been rich in essayists, and his essays rank with Lamb's, and with Lamb's alone in our language. As one of his biographers has said, "Writing of nothing that he did not know, he wrote, too, of nothing that he did not love." This is the secret of the high level at which he kept his art.

In his writings of and to children he has no equal. His story of Pet Marjorie stands by itself. Oliver Wendell Holmes, in one of his letters to Dr. Brown, said, "Most of all have I read, and re-read, and then insisted on reading for the third time aloud to my wife, that infinitely tearful, smileful, soulful, tender, caressing—where shall I stop?—story of Pet Marjorie. Dear little soul."

His humour is quaint and rich. We like few things better than the tale of the shoemaker explaining all his miseries to his minister, finishing up with, "And besides the sweep ower the street has bocht my hoose, and is gaun tae pit me oot." This climax of woe the minister tried to meet in various ways, but in vain, so on leaving he advised Jeems to "*lay it before the Lord.*" In a fortnight the minister called and found Jeems quite cheery, whistling away on his *Crepida*. "Ye're better, I see, James; how is that?" "Oh, sir, *I did as you bade me, and the sweep's deed!*"

His *Notes on Art* bring vividly back to mind the spirit which inspired and appreciated the early Victorian painters. We who now scorn their pictures and execrate their art may almost applaud the efforts which won his approval in such terms. And his taste is not even now wholly rejected. Raeburn has come to rank as a portrait painter nearly where John Brown placed him, and we would not have one word of his *Memoir of Leech* erased or rewritten. We can learn from him, better even than

from his friend Ruskin, how to explain, if not to excuse, the master-painters of British art in those days.

It is strange in reading their letters to find how much Ruskin, for all his infallibility, relied upon the encouragement, sympathy and good sense of his "best and truest friend," and how far too he fell short of Dr. Brown in receptiveness and breadth of view. Ruskin realised, enviously perhaps, the wider range of John Brown's sympathies in art. "How did you get to understand Beethoven?" he wrote. "He always sounds to me like the upsetting of bags of nails, with here and there an also dropped hammer." In *Hallé's Recital* is concentrated a whole-hearted joy in music, untrammelled it may be by technical knowledge, but large and wide enough to touch life at many points. One reads few such criticisms of music in these modern times. How he must have loved that of which he wrote, "Who can forget Mozart's 'Jupiter,' or the overture to *Der Freischütz*, or the delicious, innocent, Elysian 'Surprise' of Haydn—as if it had wandered out of Paradise, or the many-voiced sonatas of Beethoven—deep, mobile, unfathomable, melancholy as the sea?"

The best of his writings for us, however, are those which deal with the practice and profession of medicine, *Locke and Sydenham*, *Our Gideon Grays*, *Art and Science*, *Education through the Senses*, and *Happy Guessing*. Here we see him battling hard to blend the diverse factors of pure science and applied medicine, laying straight hold on the middle propositions which lie between exact facts and speculative science, and have to do with immediate application and act. It is a fine contrast that he draws between the art and the science in medicine, where he says the former "is *ante-mortem*, and runs for the stomach pump;" while the latter "is *post-mortem*, and studies the phenomena of poisoning."

But his own standpoint is well illustrated in his preface to the 1866 edition of *Horæ Subsecivæ*. "I am almost ashamed of slipping into this volume the rambling paper on 'Vaughan,' my only excuse, and it is none, being that the gentle and heavenly-minded Silurist was a country surgeon. Perhaps a better excuse would be that I like to show that our medicus may be not only, like Locke, at once a good physician and metaphysician, or like

Adams, equally great as a scholar and a domestic 'leech,' but that he may be a poet too; and, moreover, that we hard-worked family doctors, when the day's work is over, and our books posted, our letters answered, and our newspapers duly studied, may take up our Tennyson, our Wordsworth, our Dryden, our Cowper, our Shakespeare, or our Scott, and read ourselves pleasantly asleep in our arm-chair."

Medicine is the richer for such men as John Brown, who lived, practised and wrote as the advocate for going back to the old manly, intellectual and literary culture of the days of Sydenham and Arbuthnot, Heberden and Gregory; when a physician fed, enlarged, and quickened his entire nature; when he lived in the world of letters as a freeholder, and reverenced the ancients, while at the same time he pushed on among his fellows and lived in the present.

He died as he had lived, feeling the full delight—

> "That when our days do end, they are not done,
> And though we die, we shall not perish quite,
> But live two lives where others have but one."

Notes on Preparations for the Sick.

Tuberculins.—BURROUGHS, WELLCOME & Co., London.—The signal success which has attended the use of vaccines in staphylococcic and other diseases has had a notable effect in reviving interest and confidence in the specific vaccine treatment of tubercle infections. At first tuberculin as a diagnostic and in certain instances as a curative agent was hailed with enthusiasm by the medical profession, only to be followed soon after by a strong reaction against it, until it was almost entirely given up as a therapeutic agent, though always holding its place as a means of diagnosing tubercular disease. It was left to Koch to obtain a new form of tuberculin, which contained all the curative and immunising substances of the bacilli in a form suitable for inoculation and absorption. Its injection did not produce the dangerous febrile reaction of Old Tuberculin, nor any other ill-effects. New Tuberculin is a slightly opalescent fluid, consisting of an emulsion or suspension of extremely minute particles of bacterial cell-substance. It is readily absorbable, does not cause

abscess formation, and is used in the treatment of tubercular affections. The dosage is indicated in terms of weight of tubercle bacilli theoretically represented.

Tubercle Vaccine Bacillary, " Wellcome," is similar to Koch's Bacillary Emulsion, and is prepared in both human and bovine strains, each being issued in two dilutions.

New Tuberculin (W.), human or bovine, is a tubercle " endotoxin " in the sense in which that term has been used by the late Dr. Macfadyen and others. It is intended for use along similar lines to T. R. In the process of preparation the immunising constituents of the bacilli are retained, while the materials which hinder absorption, and thereby tend to bring about local irritation and induration, are removed.

Before dilution Tuberculin (W.) is standardised to contain 2 m. gms. of dry bacillary substances per cc., and the dosage is expressed in terms of the weight of dried bacillary substance actually present. Such indications as are available suggest that weight for weight, Tuberculin (W.) represents approximately five times the dose of Tuberculin (R.).

New Tuberculin (W.) is also issued as a hypodermic tabloid. One tabloid, containing the requisite dose of New Tuberculin, is dissolved in sterile water and injected hypodermically.

Tuberculin for Von Pirquet's Cutaneous Reaction.—If the skin of a tuberculous subject be gently scarified as for ordinary vaccination, and tuberculin be applied to the scratched surface, a reaction will occur within twenty-four hours, shown by the appearance of a vivid red papule. Occasionally a large area becomes infiltrated, and a vesicular eruption occurs round the primary area. These signs disappear in a few days. Tuberculin for Von Pirquet's reaction is issued in both human and bovine strains for use according to the nature of the infection suspected.

Nutrient Media—Soloid Brand.—BURROUGHS, WELLCOME & Co., London.—The preparation of bacteriological culture media on a small scale has always been tedious and unsatisfactory. The time necessary to prepare a few tubes of a given medium is practically as much as would be needed for the preparation of a large bulk, while the loss in filtering small quantities is proportionately very large.

Experiments in the Wellcome Physiological Research Laboratories have shown that many of the ordinary culture media can be dried and kept in this condition for long periods, regaining their original consistency and appearance on being re-dissolved in the requisite amount of water.

Chiefly to meet the needs of the physician or bacteriologist who requires to use a few culture tubes only and at uncertain

intervals, the "Soloid" nutrient media have been introduced. These products are dry and portable, will keep indefinitely under proper conditions, and render it possible to prepare a tube or plate of the required medium within an hour without laboratory or apparatus. They are on this account specially suitable for physicians who have not the resources of a laboratory at their disposal. Medical officers of health in rural districts will also find them useful, and for medical expeditions, camps in the tropics, etc., they will meet a decided want.

"Soloid" Bile-Salt Agar-Agar (MacConkey).—A very useful solid medium for the isolation of intestinal bacteria, such as B. coli, typhosus and dysenteriæ, from water, milk, fæces, urine, etc. The medium contains bile-salt, peptone, lactose and neutral red. The bile-salts inhibit the growth of most bacteria other than those of intestinal origin. The B. coli colonies are red, but the colonies of B. typhosus and B. dysenteriæ are colourless. The temperature of incubation recommended by MacConkey is 42° C.

"Soloid" Bile-Salt (MacConkey) is used for the same purpose as the foregoing when a liquid medium is required.

"Soloid" Nutrient Broth provides a fluid medium which may be incubated at any temperature for the cultivation of bacteria. All the common organisms, both pathogenic and non-pathogenic, grow well in this medium.

"Soloid" Nutrient Gelatin provides a transparent solid medium when it is desired to determine whether or not the organisms under investigation have any peptonising effect, which is shown by liquefaction of the gelatin.

"Soloid" (Nutrient) Agar-Agar.—Prepared by adding agar-agar to peptone beef-broth.

Influenza Vaccine—Wellcome Brand.—This vaccine is for use in cases of influenza in which the presence of bacillus influenzæ has been demonstrated. An initial dose may be given of 10 million organisms, to be increased according to the indications of the case.

Influenza Vaccine is issued in hermetically-sealed phials as follows:—

(A) 1 c.c. containing 10 million Bacillus Influenzæ.
(B) 1 c.c. ,, 50 million ,, ,,

Coryza Vaccine—Wellcome Brand.—Coryza, or catarrh, may be caused by a variety of micro-organisms occurring singly or combined. Amongst those most frequently present are the bacillus septus (bacillus coryza segmentosus) and the micrococcus catarrhalis. Three Coryza Vaccines are issued for use

according to the nature of the infection. The initial dose is 100 million organisms of one or both varieties.

Coryza Vaccine is issued in hermetically-sealed phials as follows :—

No. 1. 1 c.c. containing 100 million bacillus septus.
No. 2. 1 c.c. ,, 100 million micrococcus catarrhalis.
No. 3. 1 c.c. ,, 100 million bacillus septus and 100 million M. catarrhalis.

Lodal—Tabloids, gr. i.—BURROUGHS, WELLCOME & CO., London.—" Lodal " is prepared by the oxidation of laudanosine (an alkaloid occurring in opium) in a manner analogous to the preparation of cotarnine from narcotine.

The physiological action of " Lodal " resembles that of cotarnine, in producing tonic contraction in the pregnant and non-pregnant uterus. It differs, however, in that " Lodal " exercises more effect on the heart, slowing and strengthening the beat, and producing a rise in blood-pressure in which vaso-constriction is a definite factor. It has much the same effect on the higher centres, but its action in this respect is more powerful than that of cotarnine. Clinically it has been used with good effect in cases of uterine hemorrhage.

The Tuberculins and their Uses.—ALLEN & HANBURYS LTD., London.—To diagnose the presence of tuberculosis by the production of a specific reaction, the " old " Tuberculin of Koch is employed, usually by one of four methods :—

1. By the hypodermic injection of graduated doses.
2. By scarifying the skin and applying a solution of definite strength. (Von Pirquet.)
3. By applying an ointment of Tuberculin over an area of unbroken skin by inunction. (Moro.)
4. By the application of a specially prepared solution to the conjunctiva. (Calmette.)

Every variety and dose is prepared in sterilised " azoules," ready for hypodermic injection, for use either as a diagnostic or curative agent. The pamphlet on the Tuberculins is now in its fifth edition, and much valuable information therein is likely to be of good service.

The " Macnair " Automatic Water Steriliser.—ALLEN & HANBURYS LTD., London.—The " Macnair " Automatic Water Steriliser is a simple contrivance, which consists of two cisterns, fitted one on top of the other. The lower is a boiler, practically steam-tight ; the upper a locked reservoir. These are connected

by a pipe up the centre. The capacity of the reservoir is sufficient for a day's supply, and no water can enter it except through the connecting tube. The boiler is filled with water through a small opening, which is closed by a screw nut. The apparatus is then completely shut and the boiler becomes practically steam-tight. It is then placed on the fire, and when the water boils the steam generated forces the sterilised water up into the reservoir, from whence, after cooling, it can be drawn off by the tap.

Sulphaqua.—THE SELTZOGENE PATENT CHARGES CO., St. Helens, England.—Sulphaqua is prepared in the form of packets or charges for use in the domestic bath, and a smaller packet is prepared for use in the toilet basin, to make a bath for the face, feet or hands only. The Sulphaqua charges enable the patient to undergo in his own home with equally beneficial results a course of treatment similar to that offered at the Natural Sulphur Spas, without the cost of money attendant on reaching and residing at such locations, and also without the disturbance of business or social engagements.

Sulphaqua with hot water yields a copious and extremely finely divided precipitate of nascent sulphur. Sulphaqua does not blacken the paint of domestic baths.

The baths prepared with this preparation are soothing and non-irritating, they are inoffensive yet efficient, and can be prescribed for the most fastidious patient. They in short offer the advantage of having Harrogate or Strathpeffer brought within one's own home.

A Sulphaqua bath is now a recognised treatment for various skin diseases, rheumatism, gout, sciatica, lumbago, rheumatoid arthritis, neurasthenic conditions in arthritic subjects, etc., and as a valuable addition to the inunction treatment of syphilis with mercury, also in all cases where a course of the natural sulphur baths is indicated.

Sulphaqua Medicated Soap.—In disorders of the sebaceous glands, such as seborrhœa or dandruff, comedones or blackheads, hyperidrosis or excessive sweating of the hands or feet, bromidrosis, and for persons subject to eczematous and other skin troubles, the soap will be found of the greatest utility.

"Sanitas-Sypol."—THE "SANITAS" CO. LTD., Limehouse, London, E., has lately directed attention and experiments to the production of an antiseptic to meet all the requirements of surgical practice.

"Sanitas-Sypol" meets all these, as shown below:—

1. It contains over 50 per cent. of active principles, and is guaranteed to have four times the germicidal efficiency of pure phenol.

2. Diluted with soft or distilled water, it gives a perfectly bright and transparent solution, through which instruments can be discerned as easily as through water.
3. It is non-caustic.
4. It can be diluted 1 in 160 to 1 in 200, and thus diluted is free from slipperiness to the hands and instruments.
5. It has no corrosive or rusting action on metal surgical instruments, or on the hands of the operator.

The "Sanitas" Co. Ltd. are also sole manufacturers of **"Sanitas-Bactox (saponaceous) Disinfectant Fluid"** and **"Sanitas-Okol (emulsion) Disinfectant Fluid."** (Rideal-Walker, co-eff. 20, see *Lancet*, November 27th, 1909, p. 1614.)

Cascara-Agar Jelly.—BURNETT & TURNER, Clifton.—Many references have been made in recent medical literature to the use of Agar-Agar in habitual constipation. Since Agar-Agar is for the most part excreted unchanged in the fæces on account of its powers to absorb and retain moisture, and to resist the action of intestinal bacteria and enzymes, it prevents the formation of scybalous masses and imparts a soft consistency to the rectal contents. Casc-Agar Jelly is a pleasant and palatable form, in which the jelly is combined with a small proportion of Cascara Sagrada. It will be found that by the use of this preparation it is possible to transform the hard and dry fæces into a softer consistence, so that the intestinal contents are enabled to develop their own agency necessary to produce a healthy, normal evacuation.

It is recommended that one or two teaspoonfuls should be taken night and morning for several days in succession.

Digestin.—BURGOYNE, BURBIDGES & Co., London; YENJO SHOTEN, Tokyo.—Digestin is a purely digestive ferment procured from the Okazaki fungus, and is prepared in the Pharmaceutical Laboratory at Somei, Sugamo, Japan, some little distance from the city of Tokyo. It possesses mycelium of a whitish appearance, and is obtained from the above-named fungus, which belongs to the order of Aspergillus.

Digestin dissolves in one hour one hundred times its own weight of purified gelatine. The solution gives a marked biuret reaction. It liquefies one hundred times its own weight of starch into dextrine and maltose within eight minutes, and will convert over forty parts of starch into sugar (maltose) in one hour.

The dose for an adult is about 0.3 grammes after each meal.

Potash-Sulphur Water.—HOT SPRINGS, Ark.; INGRAM AND ROYLE, London.—An alkaline, sodic, sulphated, carbonated

and bicarbonated water—a very pure water, free from organic contamination; it flows from the south side of the Ozark Spurs of Arkansas, U.S.A. The uses of sulphur are described as follows:—

1. Sulphur plays an important part in the normal physiological processes of the body, hence it follows that sulphur is an essential to the health of all organs and tissues, and an important element to nutrition.
2. Sulphur is one of the best disinfectants, and as sulphuretted hydrogen is absorbed from the intestinal mucous membrane and carried by the blood to the lungs, where it escapes to the bronchial tubes, it follows that in this passage the sulphur acts as a disinfectant to the lungs and bronchial tubes, which explains its value in consumption and bronchitis.
3. Sulphur stimulates the bile-producing function of the liver, hence its value in torpid liver, constipation and piles.
4. Sulphur has a specific action on the skin, and is one of our most potent remedies in acne, psoriasis, eczema and syphilis.

Make sure your water is good, then drink. If you cannot go to the source, drink at home.

The Library of the Bristol Medico-Chirurgical Society.

The following donations have been received since the publication of the List in June.

August 31st, 1910.

American Urological Association (1) .. .. 1 volume.
Chicago Pathological Society (2) .. .. 1 ,,
L. M. Griffiths (3) .. .. 7 volumes.

Unbound periodicals have been received from Dr. James Swain.

SEVENTY-SEVENTH LIST OF BOOKS.

The titles of books mentioned in previous lists are not repeated.

The figures in brackets refer to the figures after the names of the donors, and show by whom the volumes were presented. The books to which no such figures are attached have either been bought from the Library Fund, or received through the *Journal*.

Allbutt and H. D. Rolleston, Sir C. [Eds.] *A System of Medicine.* Vol. VII 1910

Allen, R. W. .. .. *Vaccine Therapy* .. .. .. 3rd Ed. 1910

Althaus, J. .. .. *On Sclerosis of the Spinal Cord* .. .. (3) 1885

Bennati, F. .. .. *Recherches sur le Mécanisme de la Voix humaine* .. .. (3) 1832

Bennet, J. H. .. *Nutrition in Health and Disease* (3) 2nd Ed. 1876

Billington, W. .. *Movable Kidney* 1910

Boyce, Sir R. W. .. *Mosquito or Man* .. .. 2nd Ed. 1910

Calkins, G. N. .. *Protozoölogy* 1910

Candy, A. P. Luff and H. C. H. *A Manual of Chemistry* [4th] Ed. 1910

Culpeper, [C.] .. *Pharmacopoeia Londinensis* .. .. .. (3) [1802]

Fothergill, W. E. .. *Golden Rules of Obstetric Practice* .. 6th Ed. [1910]

Haig, A. .. .. *Uric Acid in the Clinic* 1910

Hart, A. H. .. .. *How to Cut the Drug Bill* .. .. .. 2nd Ed. 1910

Herman, G. E. .. *Difficult Labour* .. .. [5th] Ed. 1910

Hutchinson, Sir F. Treves and J. *A Manual of Operative Surgery* Vol. II. 3rd Ed. 1910

Kelynack, T. N. [Ed.] *Medical Examination of Schools and Scholars* 1910

Luff and H. C. H. Candy, A. P. *A Manual of Chemistry* [4th] Ed. 1910

Moynihan, B. G. A. *Gall-Stones* .. .. 2nd Ed. 1905

Pavlov, I. P. .. .. *The Work of the Digestive Glands* (Trans. by W. H. Thompson) .. .. .. 2nd Ed. 1910

Portland Hospital, Report of the Committee of the .. .. .. (3) 1901

Potts, G. E. Shuttleworth and W. A. *Mentally Deficient Children* 3rd Ed. 1910

Rolleston, Sir C. Allbutt and H. D. [Eds.] *A System of Medicine* Vol. VII. 1910

Salmon, W. .. .. *Seplasium: the Compleat English Physician* (3) 1693

Savill, T. D. .. .. *A Prescriber's Companion* (Ed. by C. F. Harford .. .. 4th Ed. 1910

Schofield, A. T. .. *How to Keep Fit* 1910

Shuttleworth and W. A. Potts, G. E. *Mentally Deficient Children* 3rd Ed. 1910

Treves and J. Hutchinson, Sir F. *A Manual of Operative Surgery* Vol. II. 3rd Ed. 1910

Turner, W. A. .. *Three Lectures on Epilepsy* 1910

Walton, A. J. .. *Fractures and Separated Epiphyses* 1910

Walton, H. H. .. *Operative Ophthalmic Surgery* .. .. (3) 1853

Whitla, Sir W. .. *Pharmacy, Materia Medica and Therapeutics* 9th Ed. 1910

Wingfield, H. E. .. *An Introduction to Hypnotism* 1910

Winslow, L. F. .. *The Suggestive Power of Hypnotism* .. .. [1910]

TRANSACTIONS, REPORTS, JOURNALS, &c.

American Dermatological Association, Transactions of the		1909
American Journal of Ophthalmology, The	Vol. XXVI	1909
American Urological Association, Transactions of the	(1) Vol. I	1907
Annales de Dermatologie et de Syphiligraphie	Tom. X	1909
Archiv fur klinische Chirurgie	Bd. XC	1909
Bristol Medico-Chirurgical Journal, The	Vol. XXVII	1909
Bulletin de la Socéité française de Dermatologie		1909
Bulletin de l'Académie royale de Médecine de Belgique	Tom. XXIII	1909
Chicago Pathological Society, Transactions of the	(2) Vol. VII	1906–09
Clinical Journal, The	Vol. XXXV	1910
Hospitals—		
Johns Hopkins Hospital Reports, The	Vol. XV	1910
St. Thomas's Hospital Reports	Vol. XXXVII	1910
Ireland, Transactions of the Royal Academy of Medicine in	Vol. XXVIII	1910
Journal of Medical Research, The	Vol. XXI	1909
Journal of the American Medical Association, The	Vol. LIII	1909
Library Association Record, The	Vol. XI	1909
Library, The	Vol. X	1909
Library World, The	Vol. XI	1909
Medical Chronicle, The	Vol. XVIII	1909–10
Medical Education in the United States and Canada, Report on		1910
Ophthalmological Transactions	Vol. XXIX	1909
Parasitology	Vol. II	1909
Progressive Medicine	Vols. I, II	1910
Public Health	Vols. XXI, XXII	1908-09
Rat (The) in relation to the Public Health, Report on		1910
Revue de Chirurgie	Tom. XL	1909
Revue de Gynécologie	Tom. XIII	1909
Revue générale d'Ophtalmologie	Tom. XXVIII	1909
Sleeping Sickness Commission, Reports of the	No. X	1910

Obituary Notices.

WILLIAM HENRY SPENCER, M.A., M.D.Cantab.

Fellow of the Linnæan and Royal Microscopical Society of London; Lecturer on Medicine, etc., at the Bristol University Medical School; Consulting Physician to the Bristol Royal Infirmary.

DR. SPENCER was born at Oakhill, near Bath, on July 10th, 1837. He received his early education at Crawford House, Maidenhead, and later at Dr. Bigg's School, Devizes. His first choice of a

profession was that of an engineer, and in 1854 he was apprenticed to Messrs. Craven's engineering works, Brighton. When he left in 1857 there was no part of an engine he had not made and put together, and he had himself driven an engine from Brighton to London.

Wishing to add to this technical knowledge an Arts degree, he then attended lectures at University College, London, with this end in view. Here he worked very closely, obtaining honour certificates in English Language and Literature and in Geology and Mineralogy. Shortly before the final examination his health broke down, and he had to give up his studies and put himself under the care of Dr. Edwin Martin at Weymouth to recoup.

Dr. Martin was a man far in advance of his time in the treatment of nervous diseases, and it was the close intercourse with him, and the realization that their minds worked so much on the same lines, that decided Dr. Spencer to give up engineering and prepare for the medical profession, a decision he never regretted.

Having regained his health, in 1858 he entered Jesus College, Cambridge, to prepare for his medical degree, attending Addenbrook's Hospital for the practical work.

In July, 1859, though still an undergraduate, he married, and in consequence migrated to Downing College, where special arrangements were made for married undergraduate fellow-commoners.

In 1862 he took his B.A. in the Natural Science Tripos of that year.

Some of the arrangements for the practical part of the Natural Science Tripos were at that period primitive in the extreme mutton chops not infrequently being provided for the candidates to dissect for demonstrating the tissues of the human body. This gave rise to a scathingly satirical criticism of the practical part of these examinations which Dr. Spencer contributed as an article to *The British Medical Journal*, an article which he was told, many years after, sounded the knell of these primitive proceedings. After taking his degree, and while continuing his medical training, Dr. Spencer began coaching for Natural Sciences in Cambridge. For this purpose he rented two stables in Trumpington Street, converting them into the first Physiological Laboratory in the University. Unfortunately Dr. Spencer had to give up his connection with this in 1865, as it was necessary for him to go to London to complete his preparation for his M.B., and he entered St. Mary's Hospital, Paddington, as Clinical Clerk to his friend the late Dr. Gibson. Here he still continued coaching in Medicine and Natural Sciences, in combination with his two friends Hanbury and Valentine, who took Mathematics and Classics respectively, also lecturing on Physiology at the Charing Cross Medical School. In 1866, he took his M.A. Family affairs took him up to Newcastle-on-Tyne, in 1868, where he took the post of medical

tutor to the Royal Infirmary Medical School, now the Durham University Medical School.

In 1872 he took his final M.B. at Cambridge. The same year he went to Clifton, where there appeared to be an opening for a physician, it having been his wish to settle within reach of his old home and his relations at Oakhill, Somerset.

Shortly after this there was a vacancy on the staff of the Bristol Royal Infirmary, when he was appointed Assistant-Physician, and in time, as vacancies occurred, full Physician, Dean of the Faculty, and, before leaving Clifton, Consulting Physician to this Institution. He loved his work there, and to the end of his days the Bristol Royal Infirmary, and those with whom he worked, were very near his heart.

Soon after his appointment to the Infirmary he became Lecturer on Physiology, later on Pathology, and the Principles and Practice of Medicine at the Bristol Medical School. This school had been in existence for many years, and Dr. Spencer, with his experience of teaching and love of organisation took the work up keenly. Soon afterwards the Bristol University College was started, Dr. Spencer being one of the principal promoters, and whilst he remained in Clifton he was on the Executive Committee with Professor Jowett, Sir William Ramsay, Professor Alfred Marshall, and other prominent men. All who worked with him know with what keen interest and indefatigable zeal Dr. Spencer laboured for the welfare of the Bristol Royal Infirmary, the Medical School, and University College. At some period during his connection with these Institutions he represented Bristol on the Council of the British Medical Association.

In 1878 Dr. Spencer took his M.D., his thesis for this being "On the Tendency of Disease to cause Disease," and in 1888 he became a Member of the College of Physicians, London.

In 1874 Dr. Spencer brought out and gave to his profession an instrument he had long been perfecting, a new form of binaural and differential stethoscope. This stethoscope was the parent of all the double stethoscopes now in use, and was described when it came out as "a perfect scientific instrument." One of its chief features was the hollow joint, whereby the sounds were conveyed to both ears at the same time, and by compressing the flexible rubber tubing below the joint first one side of the chest and then the other could be listened to and compared without removing the cups from the ears. An instrument very similar, but more clumsy in form and without the hollow joint, was shortly after this brought out in Germany. It is now almost the exception to find the old form of stethoscope used, yet there are very few who associate Dr. Spencer's name with the binaural one.

It is as long ago as 1872 that Dr. Spencer obtained an appointment on the staff of the Bristol Royal Infirmary, when he succeeded the late Dr. Ebenezer Ludlow as Assistant-Physician

in charge of the medical out-patients. In the following year he became Physician, and for thirteen years carried out the duties of Honorary Physician with indefatigable zeal. He was a good physician and a good colleague, so much so that he was appointed by the staff to act as Dean of the Faculty.

In 1874 he became one of the original founders of the Bristol Medico-Chirurgical Society. The first meeting of this Society was convened by a circular, dated February 20th, 1874, signed by Nelson C. Dobson, R. Shingleton Smith and W. H. Spencer, when those present constituted the nucleus of the future Society, and Dr. F. Brittan, the first President, gave an address on "Germ Theories." Dr. Spencer took a warm interest in the Society during its early years; he contributed many papers, joined in various discussions, and became president of the Society in the year 1885, when he gave a very learned, historic, but somewhat theoretical discourse on "Pyrexia, a Retrospect, a Review, and a Forecast."

In 1888 Dr. Spencer took advantage of what seemed an exceptional opportunity for stepping into a consulting practice at St. Leonards-on-Sea, taking the place of the late Dr. Arthur Gamgee there. Here also were exceptional conditions for carrying out his treatment for consumption by inhalation, on which for some years he had been wishing to specialise, and on which he had written much.

Here he perfected and finally patented the "Arema Vaporiser" and the special inhalants to be used in it, publishing a treatise on *Consumption: its Nature and Treatment*, explaining the use of the vaporiser and the application of the inhalants. Both at Bristol and St. Leonards-on-Sea he had some good results from this treatment, the accounts of which he published in the medical journals. This vaporiser was adopted at the Brompton Hospital for Consumption and at many sanatoria in different parts of the country. Vaporisers in many forms have been brought out since, but none carry out so completely as does this, with its water bath regulating the temperature of the vaporants, the scientific and chemical conditions necessary for vaporising those volatile oils to such a degree that they, when inspired, can readily pass into every part of the interior of the lungs.

As most people must realise, inventors rarely, if ever, benefit by or even get the credit for their inventions. A fertile and inventive brain seldom goes with the possession of the means necessary for making a commercial success of an invention. It is often those who can supply the money whose name is associated with, and who gain financially by, the bringing out of anything new. Dr. Spencer was no exception to this rule. The binaural stethoscope he gave to the profession, the vaporiser he patented. Of this latter the small financial gain that accrued to him went

but a small way toward meeting the expenses of perfecting and patenting the instrument.

The expenses incurred by this, with other drains on his resources, and the fact that the practice he hoped to enjoy had followed its maker, finally broke up his home.

After this he did little practice, but spent a good deal of his time visiting the south coast health resorts and the many sanatoriums for the treatment of consumption, and introducing his inhalation treatment, hoping in time to start a sanatorium of his own.

In July, 1909, he felt the first serious symptoms of the disease to which he finally succumbed—sclerosis of the spinal cord, involving general paralysis. From this time he became a partial invalid, and died in Oxford on May 27th, 1910, at the age of 72.

PUBLICATIONS.

Elements of Qualitative Chemical Analysis.—London: Macmillan. 1866.
The Tendency of Disease to cause Disease, illustrated by the Pathogeny of Diseases of the Heart and Lungs. M.D. Thesis.—London: H. K. Lewis. 1872.
"The Chemical and Therapeutic Relations of Salicine and Salicylic Acid."—*Tr. Bristol M.-Chir. Soc.*, 1874, i, 16.
"On a New Form of Stethoscope in its Relations to the Theory and Practice of Auscultation."—*Brit. M. J.*, 1874, i, 409.
"Opium, Aconite and Salicylic Acid in Acute Rheumatism."—*Ibid.*, 1878, ii, 163.
"Case of Idiopathic Inflammation of the Spinal Dura Mater."—*Lancet*, 1879, i, 836.
"On Giving Rest to the Digestive Organs by the use of Peptonised Food."—*Bristol M.-Chir. J.*, 1884, ii, 32.
"Two Cases of Gastric Ulcer treated by Peptonised Enemata."—*Ibid.*, p. 41.
"A New Neurosis (Thomson's disease)."—*Ibid.*, p. 159.
"Pyrexia: a Retrospect, a Review, and a Forecast" (President's Address).—*Ibid.*, 1885, iii, 217.
"The Scope of Medicine as a Department of Knowledge: Health and Disease."—*Med. Times and Gaz.*, 1885, ii, 627.
"Lectures on the Principles and Practice of Medicine."—*Ibid.*, pp. 627, 663.
"Cases Illustrating the Antiseptic and Antipyretic Treatment of Phthisis."—*Ibid.*, 1888, i, 184.
A New Method of Inhalation for the Treatment of Diseases of the Lungs. 1895.
Consumption: its Nature and Treatment. 1900.

ROBERT WILLIAM COE, F.R.C.S. Eng.

Consulting Surgeon to the Bristol General Hospital and to the Bristol Hospital for Sick Children, etc.

MR. COE died at his residence, Pembroke Road, Clifton, on August 11th, 1910, in his 89th year. By his death Bristol has lost its oldest and one of the most distinguished members of the medical

profession, also one of the oldest and most respected of its inhabitants. He was born at Bath, and received his general education at a private school. Subsequently he entered as a student at St. George's Hospital, London, passing through the usual courses in the ordinary way without, as far as is known, showing that conspicuous ability which in after-life attained for him that high place among his professional brethren which marked his future career. Mr. Coe obtained the M.R.C.S. in 1844, sixty-six years ago, and the Fellowship by examination in 1852, so that he must have been nearly the oldest Fellow on the roll of the college.

Mr. Coe very early in life settled in Bristol, but then as now practice was slow in coming to very young men; so he determined to proceed to Australia, which in those days was a very remote and unexplored country. He rode on horseback hundreds of miles through the country, and would probably have settled there had not family ties recalled him, when he once more settled in Bristol, laying the foundation of that practice which he retained until within three or four years of his death, and which was of a high-class character. The exact date of Mr. Coe's start in Bristol the writer has not been able to ascertain, but he was elected Surgeon to the Bristol General Hospital in 1852, some years before any member of the existing staff was born. He held the office of Surgeon for twenty-two years, and was elected Consulting Surgeon in 1874. At the time of his death he had held this office during a period of thirty-six years, thus making his official connection with the Hospital a record of fifty-eight years. Mr. Coe was one of the foremost surgeons of his day, a good operator, calm and self-reliant when unforeseen difficulties arose, a man of sound common sense and good judgment, so that his professional brethren frequently sought his advice when surgical consultations were not so common as they are to-day. Mr. Coe was most careful in the treatment of his cases and spent much time in personally attending to the various details of after-treatment. He was a martinet in keeping his dresser and nurses up to the standard of efficiency he required.

Mr. Coe was not a prolific writer on surgical subjects, but his description of the two tedious operations of excision of the wrist and excision of the os calcis cannot be improved on by modern surgeons. But perhaps his classical contribution was a case of ligature of the common carotid for intracranial aneurism following injury; this was believed to be the first case of its kind reported, and it must be remembered that surgery was not so comparatively easy and safe as it now is. It so happened that it fell to the lot of the writer of this notice to have a similar case, in which he followed Mr. Coe's lead with success.

Mr. Coe was connected for many years with the Bristol Medical School in Old Park, and was for many years Lecturer

on Surgery there; many of his old pupils still among us have a grateful recollection of their old master.

Mr. Coe was President of the Bath and Bristol Branch of the British Medical Association; he was also President of the Bristol Medico-Chirurgical Society, but in the opening days of his presidential year he had the misfortune to be too unwell to deliver the inaugural address, the only instance in the history of the Society when the address has been omitted. He, together with the present Editor of this *Journal* and the writer of this notice, took a prominent part in the formation of this strictly local medical Society.

Mr. Coe was a man of striking personality, holding strong opinions on most subjects, a keen controversialist, a good fighter, and capable when the occasion arose of expressing himself in vigorous language. These qualities, together with his firmness of purpose, and the care he took to master the details of the case in hand, made him a formidable adversary in any controversy, and were of service when as a member of the preliminary committee for establishing the University College of Bristol, now the Bristol University, he insisted on the claims of the Medical School being duly and amply safe-guarded. Probably few if any of the present Faculty of Medicine are aware how much the position they now hold in the new University is due to his influence in former years. In the early seventies, when the question of the Contagious Diseases Acts was agitating the country, Mr. Coe took a leading part in Bristol, addressing more than one public meeting; and the writer heard him speak in the Victoria Rooms for considerably over an hour against the Acts, arguing in favour of the voluntary submission of affected women to proper treatment in a well-managed hospital, rather than the compulsory examination under the Acts. As a result of Mr. Coe's strenuous advocacy, a Lock Hospital for women was established in Bristol, and he gave much time for many years to the patients of that institution.

Mr. Coe was not the kind of man to remain quiet under a real or supposed grievance. Some of the readers of this *Journal* may remember that in conjunction with Dr. Beddoe he brought before the branch meeting of the British Medical Association what he thought was a just cause of complaint against the authorities of Clifton College on the question of medical attendance on house boys, inasmuch that a boy had been specially sent to Clifton College to be under his care, but he found that he could not attend as his ordinary medical attendant, as it was required that the boy must be under the care of the medical officer of the College, who at that time was the late Dr. Long Fox. Mr. Coe brought forward his case in strong and vigorous language, and feeling ran high, though there was, as usual, much to be said for both sides. Mr. Coe protested that it was not so much the in-

dividual wrong he had suffered as the general principle which he thought unjust, and the writer has a vivid recollection of Mr. Coe quoting with emphasis the two lines which Shakespeare puts into the mouth of Hotspur when that character thought he was not getting his proper portion of land:—

> "I'll give thrice so much land to any well-deserving friend,
> But in the way of bargain, mark ye me, I cavil on the ninth part of a hair."

This quotation is reproduced as it is so thoroughly characteristic of the man.

Mr. Coe was married in middle life to a daughter of the late Dr. Borrett, formerly Physician to the Great Yarmouth Hospital. This lady, with a son and daughter, survive him. His eldest son, a gallant and promising young officer of the King's Own Regiment, was killed in the Boer War, at the Battle of Pieter's Hill, to the grief of all who knew him. This loss was the great and abiding sorrow of Mr. Coe's declining years,

PUBLICATIONS.

"Case of Aneurism of Left Internal Caroted within the Cranium," *Assoc. M. J.* 1859.

"On Disease of the Astragalo-calcaneal Joint produced by Injury," *Brit. M. J.* 1863.

"Excision of the Wrist Joint," *Ibid.* 1865.

FREDERICK WEATHERLY, M.R.C.S. Eng., L.S.A., J.P.

ONE of the oldest practitioners of the West-country passed away on August 11th, and general was the regret among the number who knew him when the sad, though not unexpected, announcement was made that Frederick Weatherly, of Portishead, had gone over to the majority.

Educated at Great Ealing School, with Professor Huxley, Cardinal Newman, Sir Henry Rawlinson, and many other notables as his school companions, he entered when almost a boy at St. Bartholomew's Hospital. Many are the stories he has told me of his hard life in the slums round that well-known hospital, and great was the practical knowledge he there gained, inculcating to a great degree those faculties of keen observation and quick perception which for years stood him in such good stead.

To-day instruments of precision are ever growing more numerous, more exact, more trustworthy. The thermometer, the ophthalmoscope and laryngoscope were unknown in his day, while bacteriology had not been dreamt of. It was upon the organs of sense that such a man as he had to depend—sight,

hearing, and touch had to take the place of the present diagnostic instrumental armamentaria.

I often look back to those days when as his apprentice I noted his wonderful and quick perceptive and observing powers, and men like Lyons, Symonds, Budd, Prichard, and Fox, whom he often called into consultation, always had a word of praise for his wise discernment. Work he loved, and his kindly voice, his unsparing efforts to relieve suffering and fight death, made him widely popular and universally respected.

He came to Portishead in 1846, then little more than a pretty fishing village, and there he worked for forty years. It was his proud boast that for thirty-six years he never was away from his work for twenty-four hours. How many country practitioners can say this ?

The year of his arrival saw him married to my dear mother, the daughter of the late Alexander Ford, of Bristol, and sister of the late James Ford, of Wraxall Court, who for so many years was leader of the Conservative party in Bristol.

He retired from active medical practice in 1886, though for some few years before this date he had relinquished a great deal of his medical work, and had determined to devote himself to public service. How well he carried that determination out is common knowledge in the West of England.

He was Chairman of the Bedminster Board of Guardians. afterwards, on the extension of the Bristol boundaries, changed to Long Ashton Board ; he was the first Chairman of the Long Ashton Rural District Council ; he was a Justice of the Peace for Somerset and County Councillor, Chairman of Bedminster and Clevedon Technical Education Committee, Commissioner of Taxes, and for many years churchwarden of the parish church.

If it had not been that in his early days of practice he had the good fortune to take under his care a gentleman who lived with him for years, he could not have given five of his sons a University education, though he was always proud of the fact that they too contributed to their educational expenses by scholarships and exhibitions. This gentleman had been a schoolfellow of Thackeray at Charterhouse, a great friend of Gladstone at Christ Church, and had travelled with Sir Walter Scott. Through him my father became known to Gladstone and many are the letters and post cards we have received from that wonderful man.

Twelve years ago, on the 15th of August, 1898, he lost my dear mother, his helpmate for so many years, and it was a touching coincidence that on the same date of this year he was laid to rest beside her.

We were thirteen in family—eight sons and five daughters, of whom seven sons and one daughter are alive to-day.

Some three years ago the past and present members of the

Long Ashton Board of Guardians, with other friends to the number of 165, marked their appreciation of his work as their Chairman for twenty-five years and of his unique service to the district in which he lived by the presentation of a handsome silver service, and the speeches made on that memorable day were full of testimony of all that his work, his tact, his energy, and his keen intellect had done for the good and for the betterment of those amongst whom he dwelt.

On Monday, August 15th, he was carried to his last resting-place on the shoulders of men whom he had assisted into the world, and by whose special request the simple and impressive funeral was arranged. It was a day to be ever remembered by those who took part in it, and proved, if proof were needed, the love and respect of those who had known him in the spring, summer, and autumn of his life.

L. A. W.

WILLIAM JAMES TIVY.

W. J. Tivy, F.R.C.P. Edin., F.R.C.S. Edin., L.M., was educated at Queen's College, Cork, his native city, also at Dublin, Edinburgh, and London. He was a Fellow of the Royal Society of Medicine, Fellow of the British Gynæcological Society, and of the Obstetrical Society of London. He was a member of our own Bristol Medico-Chirurgical Society, although he never took any active part in its work. His early years were spent in the neighbourhood of Hereford, but he settled in Clifton many years ago, and had a considerable reputation, more particularly across the Severn. Since the year 1889 he had been Honorary Surgeon to the Bristol Naval Volunteers, and he had shown much interest in ambulance work. A friend writes of him as follows:—

"Whenever there was a competition on hand there was Dr. Tivy, watch in hand, sometimes as time-keeper; rifle in hand, sometimes at the range; even tiller in hand, as coxswain of the boat; always prize list in hand, organising the prize distribution, or writing to prominent citizens for the assistance which has made the prize list a valuable incentive to emulation. Yet, with all this zeal and energy, there was a strong desire for self-effacement. He was strongly opposed to any idea of display or of attention being drawn to himself on public occasions.

"When on his death-bed he was giving directions as to his funeral he was very particular to request that he should not receive full naval honours. He expressed himself thus: 'Just the gun-carriage and the Union Jack and the necessary men, together with the boat's crew whom I coxed so badly last year.'

"It is certain that many of his patients will mourn his loss.

It is equally certain that the Bristol Division of the R.N.V.R. will feel the loss of a friend and a worker.

"Open-hearted, generous, and full of life are the expressions used by an officer of the division when speaking of him whom we laid to rest after a troublous life known only to himself."

He died at the age of 59, and his funeral was such as he desired—a gun-carriage drawn by the men in uniform. Many friends attended at the Seamen's Chapel, and a stretcher squad from the Clifton Division of the St. John Ambulance was in attendance.

He made several contributions to medical literature, a list of which we append.

"Wood's Operation for Radical Cure of Hernia."—*Brit. M. J.*, 1878, ii, 559.

Pathology and Treatment of Lateral Curvature of the Spine by the Poroplastic Jacket, Partial Recumbency, and Exercises. — London: Hamilton, Adams and Co. 1885.

Three Cases of Uterine Fibroids under Treatment by Apostoli's Electrical Method.—Ibid., 1888, i, 1376.

Electrical Treatment of Uterine Fibroids, with Cases. 1889.

Heredity in Pulmonary Phthisis.—Ibid., 1901, ii, 437.

Local Medical Notes.

The Pathological Society of Great Britain and Ireland held its summer meeting at the University on July 8th and 9th. There was a good attendance, and the meeting was most successful.

Friday, the 8th, was devoted to bacteriology, and many problems of practical interest came under discussion. Among these there was an interesting paper by Dr. Martin upon the effect of acids, alkalis and phosphates on the growth of gonococci, and a demonstration of cultures obtained upon a new medium.

Dr. Ainley Walker described some experiments showing the limitations of the carbohydrate tests for streptococci. Professor Sims Woodhead detailed his experiences in purifying waters by the use of chlorine. One part of chlorine in seven million parts of water is sufficient to kill off B.Coli in a few minutes. Dr. Henry described the characteristics of an anærobic streptothrix occurring in a case of cerebro-spinal meningitis, and mentioned some cases of tuberculous meningitis in which there was a polymorphonuclear leucocytosis, even when a secondary infection was not demonstrable. In the discussion following this paper

several speakers called attention to the early polymorphonuclear leucocytosis in tuberculous conditions; this has not yet been widely recognised.

Professors Walker Hall and Emrys-Roberts discussed the question of typhoid carriers, illustrating their remarks by a record of the case at present under their observation, together with Dr. D. S. Davies. The effect of drugs and vaccines, etc., upon the output of the bacilli, agglutinins, etc., was shown in charts containing the results of daily observations upon fæces and blood and urine extending over a period of fifteen months.

Saturday was devoted to morbid anatomy and hæmatology. A valuable paper by Professor J. Michell Clarke upon the action of X-rays in leukæmia evoked considerable discussion, and led to a proposal for the simplification of the terminology used by hæmatologists. At a later stage the manufacture of new terms was again referred to, and a suggestion was made that some definite steps be taken to obtain a standard nomenclature. Nothing definite came of the matter, but the tenour of the speeches indicated the probability of such a move in the near future.

Dr. Price Jones placed on record a number of blood counts showing the errors occasioned by the use of Toisson's fluid as a diluting agent, and advocated the more general use of Hayem's fluid. A feature of the meeting was the contribution of Dr. Alexander Bruce upon the ætiology of disseminated sclerosis. He showed a large number of excellent photo-micrographs illustrating the spread of fibrous tissue around and along veins and lymphatics. Some eighty microscopes were used for the demonstrations, and a number of naked-eye specimens were also shown. Dr. Muir exhibited a new electrical warm stage, and Mr. Lechmere demonstrated the results of his work upon cider yeasts.

There were other papers of interest, but we mention these as being of present interest to the general reader.

On Friday evening the Society held its usual dinner at the Clifton Down Hotel, and on Saturday the combined staffs of the Royal Infirmary and General Hospital entertained the members at lunch at the Queen's Hotel. The University and Literary Club made the members of the Society honorary members during the meeting, and many availed themselves of the privileges offered.

University of Bristol.—FACULTY OF MEDICINE:—

EXAMINATION SUCCESSES.

M.B., B.Ch. BRISTOL.—C. W. Brasher, A. L. Flemming, L. A. Moore, L. N. Morris, F. C. Nicholls, V. B. Green-Armytage, J. W. Taylor, W. W. King. *Part I only:* S. H. Kingston

Intermediate M.B.: B. G. Derry, A. G. Hieber. *Second Examination for B.D.S. (Dental):* R. H. Basker, J. W. Gilbert, E. J. Handford.

M.D. LOND.—C. E. K. Herapath, L. J. Short.

UNIVERSITY OF LONDON.—*First Examination for Medical Degrees:* A. W. Adams, F. K. Hayman, G. M. Jackson, Mary E. Joll, D. G. C. Tasker. *Second Examination, Part I:* H. J. McCurrich, H. J. D. Smythe. *Part II:* F. W. T. Clemens, A. H. White.

CONJOINT BOARD OF LONDON.—*Chemistry and Physics:* P. Smith, E. W. Thomas. *Physics only:* W. A. Culverwell. *Biology:* G. S. Terry. *Pharmacy:* R. G. Johnson, J. W. Gilbert. *Anatomy and Physiology:* L. Page. *Surgery:* W. W. Pratt, R. C. Clarke,* A. J. Wigmore,* B. C. Eskell,* R. M. Hiley,* W. C. Goodden.

INDIAN MEDICAL SERVICE.—*Promotion—Lieutenant to Captain:* V. B. Green-Armytage, A. N. Thomas, F. Shingleton Smith.

APPOINTMENTS.

Leicester Infirmary.—C. A. Joll, M.B., B.S., F.R.C.S., L.D.S., has been appointed House Surgeon.

Cardiff University College; Cardiff Infirmary.—E. Emrys-Roberts, M.D. Liverpool, has been appointed Professor of Pathology at University College, and Pathologist to the Infirmary.

Editorial Secretary, change of address.—Dr. J. A. Nixon is now at 19 Mortimer Road, Clifton.

* Denotes qualification.